

From: Chan, Christina
Sent: Tuesday, January 07, 2003 10:16 AM
To: Jiang, Dong; STIC-Biotech/ChemLib
Subject: RE: rush search request for 09/830,323

Importance: High

Please rush. Thanks Chris

Chris Chan
TC 1600 New Hire Training Coordinator and SPE 1644
308-3973
CM-1, 9B19

-----Original Message-----

From: Jiang, Dong
Sent: Monday, January 06, 2003 2:35 PM
To: Chan, Christina
Subject: rush search request for 09/830,323

Chris,
Could you please help me to get a rush search for the following request? The case is due this bi-week. Thank you very much.
Dong

Please search 1) SEQ ID NO:1

-issued

-commercial

Please send results on paper to Dong Jiang in 10D-08 (mail stop CM1-10D19).
Thank you very much.

Dong Jiang (78243)
703-305-1345
U.S. Patent and Trademark Office
Art Unit 1646
dong.jiang@uspto.gov

10D 08

Searcher: _____
Phone: _____
Location: _____
Date Picked Up: 1/7
Date Completed: 1/8
Searcher Prep/Review: _____
Clerical: _____
Online time: _____

TYPE OF SEARCH:
NA Sequences: _____
AA Sequences: _____
Structures: _____
Bibliographic: _____
Litigation: _____
Full text: _____
Patent Family: _____
Other: _____

VENDOR/COST (where applic.)
STN: _____
DIALOG: _____
Questel/Orbit: _____
DRLink: _____
Lexis/Nexis: _____
Sequence Sys.: _____
WWW/Internet: _____
Other (specify): _____

CM1-10D08

Mail stop: CM1-10D19

Searcher: _____
Phone: _____
Location: _____
Date Picked Up: _____
Date Completed: _____
Searcher Prep/Review: _____
Clerical: _____
Online time: _____

TYPE OF SEARCH:

NA Sequences: _____
AA Sequences: _____
Structures: _____
Bibliographic: _____
Litigation: _____
Full text: _____
Patent Family: _____
Other: _____

VENDOR/COST (where applic.)

STN: _____
DIALOG: _____
Questel/Orbit: _____
DRLink: _____
Lexis/Nexis: _____
Sequence Sys.: _____
WWW/Internet: _____
Other (specify): _____

=> d his

(FILE 'HOME' ENTERED AT 14:12:17 ON 08 JAN 2003)

FILE 'MEDLINE, BIOSIS' ENTERED AT 14:12:23 ON 08 JAN 2003

| | |
|-----|--------------------------------------|
| L1 | 973 S PIOGLITAZONE |
| L2 | 2563 S GLP-1 |
| L3 | 1 S L1 AND L2 |
| L4 | 2163 S THIAZOLIDINEDIONE |
| L5 | 445 S L1 AND L4 |
| L6 | 887 S ROSIGLITAZONE |
| L7 | 3 S L2 AND L4 |
| L8 | 2 DUP REM L7 (1 DUPLICATE REMOVED) |
| L9 | 0 S L2 AND L6 |
| L10 | 7 S (YAKUBU-MADUS, F?)/AU |
| L11 | 7 S (YAKUBU MADUS, F?)/AU |
| L12 | 5 DUP REM L11 (2 DUPLICATES REMOVED) |

| L Number | Hits | Search Text | DB | Time stamp |
|----------|------|--|---|------------------|
| - | 17 | (pioglitazone and GLP-1 and (administ\$ combin\$)).clm. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 11:53 |
| - | 30 | pioglitazone with GLP-1 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 12:48 |
| - | 2 | (pioglitazone with GLP-1).clm. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/06 19:45 |
| - | 51 | pioglitazone and GLP-1 and non adj insulin adj depend\$ | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/06 19:50 |
| - | 1 | (pioglitazone with GLP-1 and non adj insulin adj depend\$ and method).clm. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/06 19:50 |
| - | 30 | pioglitazone with GLP-1 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/06 20:04 |
| - | 1 | YAKUBUMADUS.in. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/06 20:03 |
| - | 0 | (pioglitazone with GLP-1) and YAKUBUMADUS.in. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/06 20:03 |
| - | 36 | pioglitazone same GLP-1 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/06 20:08 |
| - | 48 | (pioglitazone and GLP-1) same (administ\$ combin\$) | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/06 20:07 |
| - | 8 | pioglitazone same GLP-1 and synerg\$ | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/06 20:08 |
| - | 0 | (pioglitazone and GLP-1).ti. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 12:57 |
| - | 3 | (combin\$ and GLP-1).ti. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/06 20:13 |
| - | 2 | 5705483.pn. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/07 19:23 |
| - | 168 | thiazolidinedione.ti. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/07 19:25 |
| - | 42 | (thiazolidinedione and diabet\$).ti. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/07 19:26 |
| - | 558 | pioglitazone | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/07 19:26 |

| | | | | |
|---|------|--|---|------------------|
| - | 14 | ((thiazolidinedione and diabet\$).ti.) and pioglitazone | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/07 19:35 |
| - | 90 | pioglitazone and GLP-1 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/07 19:30 |
| - | 1 | thiazolidinedione.ti. and (pioglitazone and GLP-1) | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/07 19:30 |
| - | 1 | thiazolidinedione.ti. and GLP-1 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/07 19:36 |
| - | 7678 | jensen.in. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/07 19:36 |
| - | 3 | jensen.in. and GLP-1 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/07 19:36 |
| - | 12 | (GLP-1 and diabet\$).ti. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 12:30 |
| - | 2 | 4287200.pn. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 12:50 |
| - | 252 | thiazolidinedione and pioglitazone | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 13:16 |
| - | 14 | pioglitazone.ti. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 12:57 |
| - | 4 | pioglitazone.ti. and (thiazolidinedione and pioglitazone) | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 13:16 |
| - | 558 | pioglitazone | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 13:16 |
| - | 252 | (pioglitazone) and (thiazolidinedione and pioglitazone) | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 13:16 |
| - | 14 | (pioglitazone) and pioglitazone.ti. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 13:52 |
| - | 14 | pioglitazone.ti. and pioglitazone | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 14:33 |
| - | 315 | rosiglitazone | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 14:34 |
| - | 83 | rosiglitazone and GLP-1 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 14:35 |
| - | 21 | rosiglitazone same GLP-1 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 14:39 |

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|---|----|---|---|------------------|
| - | 0 | (rosiglitazone and GLP-1).ti. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 14:35 |
| - | 17 | (rosiglitazone and GLP-1).clm. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 14:36 |
| - | 16 | rosiglitazone with GLP-1 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 14:43 |
| - | 17 | rosiglitazone same GLP-1 same (combin\$ adminster\$) | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/01/08 14:45 |

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: January 7, 2003, 16:23:39 ; Search time 10 Seconds
(without alignments)
56.855 Million cell updates/sec

Title: US-09-830-323-1

Perfect score: 155

Sequence: 1 HAEGTFTSDVSSYLEGQAQAEFIWLKGR 30

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 117078 seqs, 18951520 residues

Total number of hits satisfying chosen parameters: 117078

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Published Applications AA.*

- 1: /cgn2_6/ptodata/1/pubpaa/US08 NEW PUB.pap.*
- 2: /cgn2_6/ptodata/1/pubpaa/PCT NEW PUB.pap.*
- 3: /cgn2_6/ptodata/1/pubpaa/US06 NEW PUB.pap.*
- 4: /cgn2_6/ptodata/1/pubpaa/US07 PUBCOMB.pap.*
- 5: /cgn2_6/ptodata/1/pubpaa/US07 NEW PUB.pap.*
- 6: /cgn2_6/ptodata/1/pubpaa/US07 PUBCOMB.pap.*
- 7: /cgn2_6/ptodata/1/pubpaa/PCTUS PUBCOMB.pap.*
- 8: /cgn2_6/ptodata/1/pubpaa/US08 PUBCOMB.pap.*
- 9: /cgn2_6/ptodata/1/pubpaa/US09 NEW PUB.pap.*
- 10: /cgn2_6/ptodata/1/pubpaa/US09 PUBCOMB.pap.*
- 11: /cgn2_6/ptodata/1/pubpaa/US10 NEW PUB.pap.*
- 12: /cgn2_6/ptodata/1/pubpaa/US10 PUBCOMB.pap.*
- 13: /cgn2_6/ptodata/1/pubpaa/US60 NEW PUB.pap.*
- 14: /cgn2_6/ptodata/1/pubpaa/US60 PUBCOMB.pap.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|-------|------------------|
| 1 | 155 | 100.0 | 30 | 9 | US-10-125-255-1 |
| 2 | 155 | 100.0 | 30 | 10 | US-09-851-738-4 |
| 3 | 155 | 100.0 | 30 | 10 | US-09-805-507-4 |
| 4 | 155 | 100.0 | 30 | 10 | US-09-859-804-4 |
| 5 | 155 | 100.0 | 30 | 10 | US-09-982-978-4 |
| 6 | 155 | 100.0 | 30 | 10 | US-09-953-021B-4 |
| 7 | 155 | 100.0 | 30 | 12 | US-10-072-540A-4 |
| 8 | 155 | 100.0 | 31 | 10 | US-09-754-723-1 |
| 9 | 155 | 100.0 | 31 | 10 | US-09-420-785A-3 |
| 10 | 155 | 100.0 | 31 | 10 | US-09-876-388-2 |
| 11 | 155 | 100.0 | 31 | 10 | US-09-876-388-17 |
| 12 | 155 | 100.0 | 31 | 10 | US-09-876-388-27 |
| 13 | 155 | 100.0 | 31 | 10 | US-09-876-388-28 |
| 14 | 155 | 100.0 | 31 | 10 | US-09-851-738-3 |
| 15 | 155 | 100.0 | 31 | 10 | US-09-805-507-3 |
| 16 | 155 | 100.0 | 31 | 10 | US-09-859-804-3 |
| 17 | 155 | 100.0 | 31 | 10 | US-09-982-978-3 |
| 18 | 155 | 100.0 | 31 | 10 | US-09-953-021B-3 |
| 19 | 155 | 100.0 | 31 | 12 | US-10-072-540A-1 |

| | | | | | | |
|----|-----|-------|----|----|------------------|-------------------|
| 20 | 155 | 100.0 | 36 | 10 | US-09-851-738-2 | Sequence 2, Appli |
| 21 | 155 | 100.0 | 36 | 10 | US-09-805-507-2 | Sequence 2, Appli |
| 22 | 155 | 100.0 | 36 | 10 | US-09-859-804-2 | Sequence 2, Appli |
| 23 | 155 | 100.0 | 36 | 10 | US-09-982-978-2 | Sequence 2, Appli |
| 24 | 155 | 100.0 | 36 | 10 | US-09-953-021B-2 | Sequence 2, Appli |
| 25 | 155 | 100.0 | 37 | 10 | US-09-420-785A-2 | Sequence 2, Appli |
| 26 | 155 | 100.0 | 37 | 10 | US-09-876-388-1 | Sequence 1, Appli |
| 27 | 155 | 100.0 | 37 | 10 | US-09-876-388-16 | Sequence 16, Appl |
| 28 | 155 | 100.0 | 37 | 10 | US-09-876-388-25 | Sequence 25, Appl |
| 29 | 155 | 100.0 | 37 | 10 | US-09-876-388-26 | Sequence 26, Appl |
| 30 | 155 | 100.0 | 37 | 10 | US-09-851-738-1 | Sequence 1, Appli |
| 31 | 155 | 100.0 | 37 | 10 | US-09-805-507-1 | Sequence 1, Appli |
| 32 | 155 | 100.0 | 37 | 10 | US-09-859-804-1 | Sequence 1, Appli |
| 33 | 155 | 100.0 | 37 | 10 | US-09-982-978-1 | Sequence 1, Appli |
| 34 | 155 | 100.0 | 37 | 10 | US-09-953-021B-1 | Sequence 1, Appli |
| 35 | 151 | 97.4 | 31 | 10 | US-09-876-388-29 | Sequence 29, Appl |
| 36 | 151 | 97.4 | 31 | 10 | US-09-876-388-30 | Sequence 30, Appl |
| 37 | 151 | 97.4 | 31 | 12 | US-10-072-540A-5 | Sequence 5, Appli |
| 38 | 143 | 92.3 | 28 | 10 | US-09-851-738-6 | Sequence 6, Appli |
| 39 | 143 | 92.3 | 28 | 10 | US-09-805-507-6 | Sequence 6, Appli |
| 40 | 143 | 92.3 | 28 | 10 | US-09-859-804-6 | Sequence 6, Appli |
| 41 | 143 | 92.3 | 28 | 10 | US-09-982-978-6 | Sequence 6, Appli |
| 42 | 143 | 92.3 | 28 | 10 | US-09-953-021B-6 | Sequence 6, Appli |
| 43 | 143 | 92.3 | 29 | 10 | US-09-851-738-5 | Sequence 5, Appli |
| 44 | 143 | 92.3 | 29 | 10 | US-09-805-507-5 | Sequence 5, Appli |
| 45 | 143 | 92.3 | 29 | 10 | US-09-859-804-5 | Sequence 5, Appli |

ALIGNMENTS

RESULT 1

US-10-125-255-1

; Sequence 1, Application US/10125255

; Patent No. US20020165342A1

; GENERAL INFORMATION:

; APPLICANT: Galloway, John A

; APPLICANT: Hoffmann, James A

; TITLE OF INVENTION: Glucagon-Like Insulinotropic Peptides, Compositions and Methods

; FILE REFERENCE: X-9332E

; CURRENT APPLICATION NUMBER: US/10/125,255

; CURRENT FILING DATE: 2002-04-17

; PRIOR APPLICATION NUMBER: 09/573,809

; PRIOR FILING DATE: 2000-05-18

; NUMBER OF SEQ ID NOS: 1

; SOFTWARE: Patent in version 3.1

; SEQ ID NO 1

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Homo sapiens

; FEATURE:

; NAME/KEY: MOD RES

; LOCATION: (30)..(30)

; OTHER INFORMATION: The arginine residue at position 30 is modified so as to replace the terminal carboxyl group with an amine.

US-10-125-255-1

Query Match 100.0%; Score 155; DB 9; Length 30;

Best Local Similarity 100.0%; Pred. No. 1.3e-16;

Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAQAEFIWLKGR 30

|||||

Db 1 HAEGTFTSDVSSYLEGQAQAEFIWLKGR 30

RESULT 2

US-09-851-738-4

; Sequence 4, Application US/09851738

; Patent No. US20020055460A1

; GENERAL INFORMATION:

; APPLICANT: Coolidge, Thomas R.

; APPLICANT: Entlers, Mario R.W.

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; TITLE OF INVENTION: Metabolic Intervention with GLP-1 to Improve the Function of
; FILE OF INVENTION: Ischemic and Reperfused Tissue
; FILE REFERENCE: P03660US1
; CURRENT APPLICATION NUMBER: US/09/851,738
; CURRENT FILING DATE: 2001-05-09
; PRIOR APPLICATION NUMBER: 09/302,596
; PRIOR FILING DATE: 1999-04-30
; NUMBER OF SEQ ID NOS: 13
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 4
; LENGTH: 30
; TYPE: PRT
; ORGANISM: mammalian
US-09-851-738-4

Query Match      100.0%; Score 155; DB 10; Length 30;
Best Local Similarity 100.0%; Pred. No. 1.3e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
Db 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30

RESULT 3
US-09-805-507-4
; Sequence 4, Application US/09805507
; Patent No. US20020098195A1
; GENERAL INFORMATION:
; APPLICANT: COOLIDGE, THOMAS R.
; APPLICANT: EHLERS, MARIO
; TITLE OF INVENTION: TREATMENT OF ACUTE CORONARY SYNDROME WITH GLP-1
; FILE REFERENCE: 089187/0395
; CURRENT APPLICATION NUMBER: US/09/805,507
; CURRENT FILING DATE: 2001-03-14
; PRIOR APPLICATION NUMBER: 09/859,804
; PRIOR FILING DATE: 2001-05-18
; NUMBER OF SEQ ID NOS: 13
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 4
; LENGTH: 30
; TYPE: PRT
; ORGANISM: Unknown Organism
; FEATURE:
; OTHER INFORMATION: Description of Unknown Organism: Mammalian GLP
US-09-805-507-4

Query Match      100.0%; Score 155; DB 10; Length 30;
Best Local Similarity 100.0%; Pred. No. 1.3e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
Db 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30

RESULT 4
US-09-859-804-4
; Sequence 4, Application US/09859804
; Patent No. US20020107206A1
; GENERAL INFORMATION:
; APPLICANT: COOLIDGE, THOMAS R.
; APPLICANT: EHLERS, MARIO
; TITLE OF INVENTION: TREATMENT OF ACUTE CORONARY SYNDROME WITH GLP-1
; FILE REFERENCE: 089187/0395
; CURRENT APPLICATION NUMBER: US/09/859,804
; CURRENT FILING DATE: 2001-05-18
; PRIOR APPLICATION NUMBER: 60/205,239
; PRIOR FILING DATE: 2000-05-19
; NUMBER OF SEQ ID NOS: 13
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 4
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; LENGTH: 30
; TYPE: PRT
; ORGANISM: Unknown Organism
; FEATURE:
; OTHER INFORMATION: Description of Unknown Organism: Mammalian GLP
US-09-859-804-4

Query Match      100.0%; Score 155; DB 10; Length 30;
Best Local Similarity 100.0%; Pred. No. 1.3e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30

RESULT 5
US-09-982-978-4
; Sequence 4, Application US/09982978
; Patent No. US20020146405A1
; GENERAL INFORMATION:
; APPLICANT: COOLIDGE, THOMAS R.
; APPLICANT: EHLERS, MARIO
; TITLE OF INVENTION: TREATMENT OF ACUTE CORONARY SYNDROME WITH GLP-1
; FILE REFERENCE: 089187/0395
; CURRENT APPLICATION NUMBER: US/09/982,978
; CURRENT FILING DATE: 2001-10-22
; PRIOR APPLICATION NUMBER: 09/859,804
; PRIOR FILING DATE: 2001-05-18
; PRIOR APPLICATION NUMBER: 60/205,239
; PRIOR FILING DATE: 2000-05-19
; NUMBER OF SEQ ID NOS: 13
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 4
; LENGTH: 30
; TYPE: PRT
; ORGANISM: Unknown Organism
; FEATURE:
; OTHER INFORMATION: Description of Unknown Organism: Mammalian GLP
US-09-982-978-4

Query Match      100.0%; Score 155; DB 10; Length 30;
Best Local Similarity 100.0%; Pred. No. 1.3e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
Db 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30

RESULT 6
US-09-953-021B-4
; Sequence 4, Application US/09953021B
; Patent No. US20020147131A1
; GENERAL INFORMATION:
; APPLICANT: COOLIDGE, THOMAS L.
; APPLICANT: Ehlers, Mario R.W.
; TITLE OF INVENTION: Metabolic Intervention with GLP-1 to Improve the Function of Ische
; TITLE OF INVENTION: Reperfused Skeletal Muscle Tissue
; FILE REFERENCE: P03660US6
; CURRENT APPLICATION NUMBER: US/09/953,021B
; CURRENT FILING DATE: 2001-09-11
; PRIOR APPLICATION NUMBER: 09/302,596
; PRIOR FILING DATE: 1999-04-30
; NUMBER OF SEQ ID NOS: 13
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 4
; LENGTH: 30
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-953-021B-4
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US-09-876-388-2
; Sequence 2, Application US/09876388
; Patent No. US20020049153A1
GENERAL INFORMATION:
; APPLICANT: Bridon, Dominique P.
; APPLICANT: L'Archeveque, Benoit
; APPLICANT: Ezrin, Alan M.
; APPLICANT: Holmes, Darren L.
; APPLICANT: Leblanc, Anouk
; APPLICANT: St. Pierre, Serge
; TITLE OF INVENTION: LONG LASTING II
; FILE REFERENCE: 500862001610
; CURRENT APPLICATION NUMBER: US/09/
; CURRENT FILING DATE: 2001-09-26
; PRIOR APPLICATION NUMBER: 09/623,6
; PRIOR FILING DATE: 2000-09-05
; PRIOR APPLICATION NUMBER: PCT/US00
; PRIOR FILING DATE: 2000-05-17
; PRIOR APPLICATION NUMBER: 60/159,7
; PRIOR FILING DATE: 1999-10-15
; PRIOR APPLICATION NUMBER: 60/134,4
; PRIOR FILING DATE: 1999-05-17
; NUMBER OF SEQ IDS NOS: 35
; SOFTWARE: PatentIn Ver. 2.1

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; SEQ ID NO 2
; LENGTH: 31
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic
; OTHER INFORMATION: Peptide
US-09-876-388-2

Query Match 100.0%; Score 155; DB 10; Length 31;
Best Local Similarity 100.0%; Pred. No. 1.3e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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DB 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30

RESULT 11
US-09-876-388-17
; Sequence 17, Application US/09876388
; Patent No. US20020049153A1
; GENERAL INFORMATION:
; APPLICANT: Bridon, Dominique P.
; APPLICANT: Ezrin, Alan M.
; APPLICANT: Holmes, Darren L.
; APPLICANT: Leblanc, Anouk
; APPLICANT: St. Pierre, Serge
; TITLE OF INVENTION: LONG LASTING INSULINOTROPIC PEPTIDES
; FILE REFERENCE: 500862001610
; CURRENT APPLICATION NUMBER: US/09/876,388
; CURRENT FILING DATE: 2001-09-24
; PRIOR APPLICATION NUMBER: 09/623,618
; PRIOR FILING DATE: 2000-09-05
; PRIOR APPLICATION NUMBER: PCT/US00/13563
; PRIOR FILING DATE: 2000-05-17
; PRIOR APPLICATION NUMBER: 60/159,783
; PRIOR FILING DATE: 1999-10-15
; PRIOR APPLICATION NUMBER: 60/134,406
; PRIOR FILING DATE: 1999-05-17
; NUMBER OF SEQ ID NOS: 35
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 17
; LENGTH: 31
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic
; OTHER INFORMATION: Peptide
US-09-876-388-17

Query Match 100.0%; Score 155; DB 10; Length 31;
Best Local Similarity 100.0%; Pred. No. 1.3e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
|||||
DB 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30

RESULT 12
US-09-876-388-27
; Sequence 27, Application US/09876388
; Patent No. US20020049153A1
; GENERAL INFORMATION:
; APPLICANT: Bridon, Dominique P.
; APPLICANT: Ezrin, Alan M.
; APPLICANT: Holmes, Darren L.
; APPLICANT: Leblanc, Anouk
; APPLICANT: St. Pierre, Serge
; TITLE OF INVENTION: LONG LASTING INSULINOTROPIC PEPTIDES

; FILE REFERENCE: 500862001610
; CURRENT APPLICATION NUMBER: US/09/876,388
; CURRENT FILING DATE: 2001-09-24
; PRIOR APPLICATION NUMBER: 09/623,618
; PRIOR FILING DATE: 2000-09-05
; PRIOR APPLICATION NUMBER: PCT/US00/13563
; PRIOR FILING DATE: 2000-05-17
; PRIOR APPLICATION NUMBER: 60/159,783
; PRIOR FILING DATE: 1999-10-15
; PRIOR APPLICATION NUMBER: 60/134,406
; PRIOR FILING DATE: 1999-05-17
; NUMBER OF SEQ ID NOS: 35
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 27
; LENGTH: 31
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic
; OTHER INFORMATION: Peptide
; NAME/KEY: MOD_RES
; LOCATION: 31
; OTHER INFORMATION: Xaa represents Lys(E-MPA)-NH2-4TFA and where "E" represents Epsi
US-09-876-388-27

Query Match 100.0%; Score 155; DB 10; Length 31;
Best Local Similarity 100.0%; Pred. No. 1.3e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
|||||
DB 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30

RESULT 13
US-09-876-388-28
; Sequence 28, Application US/09876388
; Patent No. US20020049153A1
; GENERAL INFORMATION:
; APPLICANT: Bridon, Dominique P.
; APPLICANT: L'Archeveque, Benoit
; APPLICANT: Ezrin, Alan M.
; APPLICANT: Holmes, Darren L.
; APPLICANT: Leblanc, Anouk
; APPLICANT: St. Pierre, Serge
; TITLE OF INVENTION: LONG LASTING INSULINOTROPIC PEPTIDES
; FILE REFERENCE: 500862001610
; CURRENT APPLICATION NUMBER: US/09/876,388
; CURRENT FILING DATE: 2001-09-24
; PRIOR APPLICATION NUMBER: 09/623,618
; PRIOR FILING DATE: 2000-09-05
; PRIOR APPLICATION NUMBER: PCT/US00/13563
; PRIOR FILING DATE: 2000-05-17
; PRIOR APPLICATION NUMBER: 60/159,783
; PRIOR FILING DATE: 1999-10-15
; PRIOR APPLICATION NUMBER: 60/134,406
; PRIOR FILING DATE: 1999-05-17
; NUMBER OF SEQ ID NOS: 35
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 28
; LENGTH: 31
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic
; OTHER INFORMATION: Peptide
; NAME/KEY: MOD_RES
; LOCATION: 31
; OTHER INFORMATION: Xaa represents Lys(E-AEEA-AEEA-MPA)-NH2-4TFA and where "E" repre
US-09-876-388-28

Query Match 100.0%; Score 155; DB 10; Length 31;
Best Local Similarity 100.0%; Pred. No. 1.3e-16;

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Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGFTSDVSSYLEGQAAKEFIAVLVKGK 30
  |||||
Db 1 HAEGFTSDVSSYLEGQAAKEFIAVLVKGK 30

RESULT 14
US-09-851-738-3
; Sequence 3, Application US/09851738
; Patent No. US20020055460A1
; GENERAL INFORMATION:
; APPLICANT: Coolidge, Thomas R.
; APPLICANT: Ehlers, Mario R.W.
; TITLE OF INVENTION: Metabolic Intervention with GLP-1 to Improve the Function of
; TITLE OF INVENTION: Ischemic and Reperfused Tissue
; FILE REFERENCE: P03660US1
; CURRENT APPLICATION NUMBER: US/09/851,738
; CURRENT FILING DATE: 2001-05-09
; PRIOR APPLICATION NUMBER: 09/302,596
; PRIOR FILING DATE: 1999-04-30
; NUMBER OF SEQ ID NOS: 13
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 3
; LENGTH: 31
; TYPE: PRT
; ORGANISM: mammalian
US-09-851-738-3

Query Match 100.0%; Score 155; DB 10; Length 31;
Best Local Similarity 100.0%; Pred. No. 1.3e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGFTSDVSSYLEGQAAKEFIAVLVKGK 30
  |||||
Db 1 HAEGFTSDVSSYLEGQAAKEFIAVLVKGK 30

RESULT 15
US-09-805-507-3
; Sequence 3, Application US/09805507
; Patent No. US2002098195A1
; GENERAL INFORMATION:
; APPLICANT: Coolidge, Thomas R.
; APPLICANT: Ehlers, Mario
; TITLE OF INVENTION: TREATMENT OF ACUTE CORONARY SYNDROME WITH GLP-1
; FILE REFERENCE: 089187/0395
; CURRENT APPLICATION NUMBER: US/09/805,507
; CURRENT FILING DATE: 2001-03-14
; PRIOR APPLICATION NUMBER: 09/859,804
; PRIOR FILING DATE: 2001-05-18
; NUMBER OF SEQ ID NOS: 13
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 3
; LENGTH: 31
; TYPE: PRT
; ORGANISM: Unknown Organism
; FEATURE:
; OTHER INFORMATION: Description of Unknown Organism: Mammalian GLP
; OTHER INFORMATION: peptide
US-09-805-507-3

Query Match 100.0%; Score 155; DB 10; Length 31;
Best Local Similarity 100.0%; Pred. No. 1.3e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGFTSDVSSYLEGQAAKEFIAVLVKGK 30
  |||||
Db 1 HAEGFTSDVSSYLEGQAAKEFIAVLVKGK 30

Search completed: January 7, 2003, 16:25:27
Job time : 10 secs
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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: January 7, 2003, 16:19:19 ; Search time 36 Seconds
(without alignments)
111.042 Million cell updates/sec

Title: US-09-830-323-1

Perfect score: 155

Sequence: 1 HAEGTFTSDVSSYLEGQAARFIWLVRGR 30

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : A_Geneseq_101002.*

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- 11: /SID22/gcgdata/geneseq/geneseq-emb1/AA1990.DAT.*
- 12: /SID22/gcgdata/geneseq/geneseq-emb1/AA1991.DAT.*
- 13: /SID22/gcgdata/geneseq/geneseq-emb1/AA1992.DAT.*
- 14: /SID22/gcgdata/geneseq/geneseq-emb1/AA1993.DAT.*
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- 19: /SID22/gcgdata/geneseq/geneseq-emb1/AA1998.DAT.*
- 20: /SID22/gcgdata/geneseq/geneseq-emb1/AA1999.DAT.*
- 21: /SID22/gcgdata/geneseq/geneseq-emb1/AA2000.DAT.*
- 22: /SID22/gcgdata/geneseq/geneseq-emb1/AA2001.DAT.*
- 23: /SID22/gcgdata/geneseq/geneseq-emb1/AA2002.DAT.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Match | Length | DB ID | Description |
|------------|-------|-------|--------|-------------|--------------------|
| 1 | 155 | 100.0 | 30 | 15 AAR45435 | Insulinotrope der |
| 2 | 155 | 100.0 | 30 | 15 AAR63247 | Insulinotrope (GL |
| 3 | 155 | 100.0 | 30 | 16 AAR69063 | Amidated Glucagon |
| 4 | 155 | 100.0 | 30 | 16 AAR79809 | Glucagon like pept |
| 5 | 155 | 100.0 | 30 | 16 AAR80548 | Human glucagon lik |
| 6 | 155 | 100.0 | 30 | 17 AAR98956 | Target peptide (GL |
| 7 | 155 | 100.0 | 30 | 17 AAR98975 | GLP1(7-35)-NH2. S |
| 8 | 155 | 100.0 | 30 | 18 AAW16383 | Glucagon-like pept |
| 9 | 155 | 100.0 | 30 | 19 AAW63288 | Glucagon-like pept |
| 10 | 155 | 100.0 | 30 | 19 AAW63182 | GLP-1(7-36). Homo |

| | | | | | |
|----|-----|-------|----|-------------|--------------------|
| 11 | 155 | 100.0 | 30 | 19 AAW50906 | Glucagon-like pept |
| 12 | 155 | 100.0 | 30 | 20 AAY42935 | Glucagon-like pept |
| 13 | 155 | 100.0 | 30 | 20 AAY27374 | Glucagon-like pept |
| 14 | 155 | 100.0 | 30 | 20 AAY39773 | Glucagon like pept |
| 15 | 155 | 100.0 | 30 | 20 AAY34198 | GLP-1 mutant pepti |
| 16 | 155 | 100.0 | 30 | 20 AAY31503 | Glucagon-like pept |
| 17 | 155 | 100.0 | 30 | 20 AAY22166 | GLP-1-like peptide |
| 18 | 155 | 100.0 | 30 | 20 AAY03719 | Amino acid sequenc |
| 19 | 155 | 100.0 | 30 | 21 AAB11283 | GLP-1 peptide SEQ |
| 20 | 155 | 100.0 | 30 | 21 AAB21340 | GLP-1 peptide GLP- |
| 21 | 155 | 100.0 | 30 | 21 AAB21108 | Human glucagon-lik |
| 22 | 155 | 100.0 | 30 | 21 AAB07294 | Modified Glucagon |
| 23 | 155 | 100.0 | 30 | 21 AAB07313 | Modified Glucagon |
| 24 | 155 | 100.0 | 30 | 21 AAB07314 | Modified Glucagon |
| 25 | 155 | 100.0 | 30 | 21 AAY53280 | Glucagon-like pept |
| 26 | 155 | 100.0 | 30 | 21 AAY78949 | Glucagon-like pept |
| 27 | 155 | 100.0 | 30 | 22 AAU07375 | Mammalian glucagon |
| 28 | 155 | 100.0 | 30 | 22 AAE09260 | Human glucagon-lik |
| 29 | 155 | 100.0 | 30 | 22 AAG63303 | An insoluble glucu |
| 30 | 155 | 100.0 | 30 | 22 AAB82336 | Glucagon-like pept |
| 31 | 155 | 100.0 | 30 | 22 AAB83291 | GLP-1 peptide #2. |
| 32 | 155 | 100.0 | 30 | 22 AAG70461 | GLP-1. Unidenti |
| 33 | 155 | 100.0 | 30 | 22 AAB91170 | Pancreatic hormone |
| 34 | 155 | 100.0 | 30 | 22 AAB91181 | Pancreatic hormone |
| 35 | 155 | 100.0 | 30 | 22 AAB60124 | Human glucagon-lik |
| 36 | 155 | 100.0 | 30 | 22 AAB60249 | Glucagon-like pept |
| 37 | 155 | 100.0 | 30 | 22 AAB36416 | Glucagon-like pept |
| 38 | 155 | 100.0 | 30 | 22 AAB36429 | Glucagon-like pept |
| 39 | 155 | 100.0 | 30 | 22 AAB85822 | Glucagon-like pept |
| 40 | 155 | 100.0 | 30 | 23 ABB80097 | Glucagon like pept |
| 41 | 155 | 100.0 | 30 | 23 AAE14422 | Mammalian glucagon |
| 42 | 155 | 100.0 | 30 | 23 ABB07143 | Glucagon-like pept |
| 43 | 155 | 100.0 | 30 | 23 ABB07144 | Glucagon-like pept |
| 44 | 155 | 100.0 | 30 | 23 AAW50393 | Glucagon-like pept |
| 45 | 155 | 100.0 | 31 | 8 AAP71072 | Insulinotropic pep |

ALIGNMENTS

RESULT 1
AAR45435
ID AAR45435 standard; protein; 30 AA.
XX
AC AAR45435;
XX
DT 27-JUN-1994 (first entry)
XX
DE Insulinotrope derivative.
XX
KW Insulinotrope; activity; enhancing insulin activity; treatment;
XX
OS Synthetic.
XX
PN WO9325579-A.
XX
PD 23-DEC-1993.
XX
PF 14-APR-1993; 93WO-US03388.
XX
PR 15-JUN-1992; 92US-0899073.
XX
(PFIZ) PFIZER INC.
XX
PI Andrews GC, Daumy GO, Francoeur ML, Larson ER;
XX
DR WPI; 1994-007457/01.
XX
PT New derivs. of glucagon-like peptide 1 and insulinotrope - used for
XX
PS enhancing insulin action in a mammal, partic. by iontophoretic admin.
Claim 3; Page 20; 32pp; English.

| | | | |
|----|--|---------------|--|
| PR | 24-MAY-1993; | 93US-0066480. | |
| XX | | | |
| XX | (ENGJ/) ENG J. | | |
| XX | | | |
| PI | Eng J; | | |
| XX | | | |
| DR | WPI; 1995-262627/34. | | |
| XX | | | |
| XX | Stimulating/inhibiting insulin release with exendin polypeptide(s) - | | |
| PT | for treating diabetes mellitus and preventing hyperglycaemia. | | |
| XX | | | |
| PS | Disclosure; Columns 5-6; 17pp; English. | | |
| XX | | | |
| CC | AAR80548 is the human glucagon like peptide (GLP-1), to which the | | |
| CC | Heloderma horridum/suspectum exendin-3/-4 peptides are analogous. | | |
| CC | The exendin peptides are insulinotropic, and can therefore be used | | |
| CC | in the treatment of diabetes mellitus (types I or II), and for the | | |
| CC | prevention of hyperglycaemia. | | |
| XX | | | |
| SQ | Sequence 30 AA; | | |
| | Query Match 100.0%; Score 155; DB 16; Length 30; | | |
| | Best Local Similarity 100.0%; Pred. No. 1.1e-15; | | |
| | Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0 | | |
| QY | 1 HAEGTFTSDVSSYLEGQAQKEFIAMLVKGR 30 | | |
| | | | |
| DB | 1 HAEGTFTSDVSSYLEGQAQKEFIAMLVKGR 30 | | |
| | | | |
| | RESULT 6 | | |
| | AAR98956 | | |
| ID | AAR98956 standard; peptide; 30 AA. | | |
| XX | | | |
| AC | AAR98956; | | |
| XX | | | |
| DT | 15-JAN-1997 (first entry) | | |
| XX | | | |
| DE | Target peptide (GLP1(7-36)) used in fusion protein construct. | | |
| XX | | | |
| KW | Fusion protein construct; isolation; purification; | | |
| KW | growth hormone releasing factor; glucagon-like peptide 1; | | |
| KW | parathyroid hormone; inclusion body; carbonic anhydrase. | | |
| OS | Synthetic. | | |
| XX | | | |
| PN | WO9617942-A1. | | |
| XX | | | |
| PD | 13-JUN-1996. | | |
| XX | | | |
| PF | 07-DEC-1995; 95WO-US15800. | | |
| XX | | | |
| XX | 07-DEC-1994; 94US-0350530. | | |
| XX | | | |
| PA | (BION-) BIONEERBRASKA INC. | | |
| XX | | | |
| PI | De LA MOTTE RS, Henriksen DB, Holmquist B, Manning SD; | | |
| PI | Partridge BE, Stout JS, Wagner FW; | | |
| XX | | | |
| DR | WPI; 1996-287186/29. | | |
| XX | | | |
| PT | Isolation and purificn of peptide(s) from fusion protein constructs | | |
| PT | - which include a carbonic anhydrase and a variable fused | | |
| PT | polypeptide | | |
| XX | | | |
| PS | Claim 58; Page 50; 67pp; English. | | |
| XX | | | |
| CC | A new method for the isolation and/or purification of a recombinant | | |
| CC | peptide employs a fusion protein construct (FPC) comprising a | | |
| CC | carbonic anhydrase and a variable fused polypeptide containing a | | |
| CC | target peptide. The method comprises precipitating either the FPC or | | |
| CC | a fragment of the FPC including the carbonic anhydrase. An | | |
| CC | alternative method of producing the peptide comprises expressing the | | |

| | | | |
|----|--|---------------|--|
| PR | 24-MAY-1993; | 93US-0066480. | |
| XX | | | |
| XX | (ENGJ/) ENG J. | | |
| XX | | | |
| PI | Eng J; | | |
| XX | | | |
| DR | WPI; 1995-262627/34. | | |
| XX | | | |
| XX | Stimulating/inhibiting insulin release with exendin polypeptide(s) - | | |
| PT | for treating diabetes mellitus and preventing hyperglycaemia. | | |
| XX | | | |
| PS | Disclosure; Columns 5-6; 17pp; English. | | |
| XX | | | |
| CC | AAR80548 is the human glucagon like peptide (GLP-1), to which the | | |
| CC | Heloderma horridum/suspectum exendin-3/-4 peptides are analogous. | | |
| CC | The exendin peptides are insulinotropic, and can therefore be used | | |
| CC | in the treatment of diabetes mellitus (types I or II), and for the | | |
| CC | prevention of hyperglycaemia. | | |
| XX | | | |
| SQ | Sequence 30 AA; | | |
| | Query Match 100.0%; Score 155; DB 16; Length 30; | | |
| | Best Local Similarity 100.0%; Pred. No. 1.1e-15; | | |
| | Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0 | | |
| QY | 1 HAEGTFTSDVSSYLEGQAQKEFIAMLVKGR 30 | | |
| | | | |
| DB | 1 HAEGTFTSDVSSYLEGQAQKEFIAMLVKGR 30 | | |
| | | | |
| | RESULT 6 | | |
| | AAR98956 | | |
| ID | AAR98956 standard; peptide; 30 AA. | | |
| XX | | | |
| AC | AAR98956; | | |
| XX | | | |
| DT | 15-JAN-1997 (first entry) | | |
| XX | | | |
| DE | Target peptide (GLP1(7-36)) used in fusion protein construct. | | |
| XX | | | |
| KW | Fusion protein construct; isolation; purification; | | |
| KW | growth hormone releasing factor; glucagon-like peptide 1; | | |
| KW | parathyroid hormone; inclusion body; carbonic anhydrase. | | |
| OS | Synthetic. | | |
| XX | | | |
| PN | WO9617942-A1. | | |
| XX | | | |
| PD | 13-JUN-1996. | | |
| XX | | | |
| PF | 07-DEC-1995; 95WO-US15800. | | |
| XX | | | |
| XX | 07-DEC-1994; 94US-0350530. | | |
| XX | | | |
| PA | (BION-) BIONEERBRASKA INC. | | |
| XX | | | |
| PI | De LA MOTTE RS, Henriksen DB, Holmquist B, Manning SD; | | |
| PI | Partridge BE, Stout JS, Wagner FW; | | |
| XX | | | |
| DR | WPI; 1996-287186/29. | | |
| XX | | | |
| PT | Isolation and purificn of peptide(s) from fusion protein constructs | | |
| PT | - which include a carbonic anhydrase and a variable fused | | |
| PT | polypeptide | | |
| XX | | | |
| PS | Claim 58; Page 50; 67pp; English. | | |
| XX | | | |
| CC | A new method for the isolation and/or purification of a recombinant | | |
| CC | peptide employs a fusion protein construct (FPC) comprising a | | |
| CC | carbonic anhydrase and a variable fused polypeptide containing a | | |
| CC | target peptide. The method comprises precipitating either the FPC or | | |
| CC | a fragment of the FPC including the carbonic anhydrase. An | | |
| CC | alternative method of producing the peptide comprises expressing the | | |

CC FPC as part of an inclusion body. The target peptides of the FPC are
 CC derived from growth hormone releasing factor (GRF), glucagon-like
 CC peptide 1 (GLP1) or parathyroid hormone (PTH). This sequence
 CC corresponds to amino acids 7-36 of GLP1.

XX SQ Sequence 30 AA;

Query Match 100.0%; Score 155; DB 17; Length 30;
 Best Local Similarity 100.0%; Pred. No. 1.1e-15;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
 |||||
 Db 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30

RESULT 7

AAW98975
 ID AAR98975 standard; Peptide; 30 AA.

XX AAR98975;

XX DT 03-DEC-1996 (first entry)

XX DE GLP1 (7-35)-NH2.

XX GLP1; C-amide; C-amidated peptide; alpha-carboxamide;
 KW recombinant protein; fusion protein; transpeptidation.

XX OS Synthetic.

XX FH Key Location/Qualifiers
 FT Modified-site 30 /note= "C-terminal amide"

XX PN WO9617941-A2.

XX PD 13-JUN-1996.

XX PF 07-DEC-1995; 95WO-US15799.

XX PR 07-DEC-1994; 94US-0350528.

XX PA (BION-) BIONEERASKA INC.

XX PI Heriksen DB, Holmquist B, Patridge BE, Stout JS;
 PI Wagner FW;

XX DR WPI; 1996-287185/29.

XX Production of C-terminal alpha-carboxamidated peptide(s) - by
 PT cleavage and transpeptidation of recombinant multicopy peptide(s) or
 PT fusion constructs

XX Example 16; Page 69; 93pp; English.

XX Amidated recombinant GLP1(7-36)-NH2 (AAR98975) may be prepd. from
 CC a recombinant multicopy fusion peptide by cleavage, transamidation
 CC and photochemical rearrangement. A DNA construct is formed by
 CC joining 4 copies of the coding sequence for GLP1(7-36)-Met
 CC (AAR98976) and a linker peptide including a thrombin cleavage site.
 CC Expression in E. coli, followed by thrombin and CNBr digestion yields
 CC GLP1(7-36)-Hse (AAR98977), which is subjected to transamidation and
 CC UV irradiation to yield GLP1(7-36)-NH2. The amidated peptide may also
 CC be produced via GLP1(7-35)-Met (AAR98978) using a transpeptidation
 CC reaction.

XX SQ Sequence 30 AA;

Query Match 100.0%; Score 155; DB 17; Length 30;
 Best Local Similarity 100.0%; Pred. No. 1.1e-15;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
 |||||
 Db 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30

RESULT 8

AAW16383

ID AAW16383 standard; Peptide; 30 AA.

XX AC AAW16383;

XX DT 01-OCT-1997 (first entry)

XX DE Glucagon-like peptide-1 (7-36).

XX KW Glucagon-like peptide-1 (7-36); GLP-1 (7-36); insulin secretagogue;
 KW insulinotropic hormone; type II diabetes mellitus; therapy.

XX OS Rattus sp.

XX PN US5614492-A.

XX PD 25-MAR-1997.

XX PF 05-MAY-1986; 86US-0859928.

XX PR 05-SEP-1991; 91US-0756215.

XX PR 05-MAY-1986; 86US-0859928.

XX PR 26-JAN-1988; 88US-0148517.

XX PR 01-JUN-1990; 90US-0532111.

XX PR 23-NOV-1993; 93US-0156800.

XX PA (GEHO) GEN HOSPITAL CORP.

XX PI Habener JF;

XX DR WPI; 1997-201513/18.

XX Glucagon-like peptide-1 fragment comprising amino acids 7-36 -
 PT useful for enhancing insulin production in pancreatic islet cells,
 PT especially for treating type II diabetes mellitus

XX PS Claim 1; Column 34; 37pp; English.

XX CC Glucagon-like peptide-1 (7-36) (AAW16383) comprises amino acid
 CC residues 7-36 of rat glucagon-like peptide-1 (GLP-1) (see also
 CC AAW16384). It is naturally produced from GLP-1 in the intestine
 CC and to a lesser extent in the pancreas. GLP-1(7-36) has
 CC insulinotropic activity, being able to stimulate the synthesis
 CC and secretion of insulin from the pancreas. It can be produced
 CC by chemical synthesis or by proteolytic digestion of GLP-1 for use
 CC as an insulin secretagogue or for the treatment of type II diabetes
 CC mellitus.

XX SQ Sequence 30 AA;

Query Match 100.0%; Score 155; DB 18; Length 30;
 Best Local Similarity 100.0%; Pred. No. 1.1e-15;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
 |||||
 Db 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30

RESULT 9

AAW63288

ID AAW63288 standard; peptide; 30 AA.

XX AC AAW63288;

XX DT 29-SEP-1998 (first entry)

XX

DE Glucagon-like peptide-1 (7-36) amide.
 XX GLP-1; glucagon-like peptide; obesity.
 XX Homo sapiens.
 OS
 XX Key Location/Qualifiers
 FH Modified-site 30
 FT /note= "C-terminal amide"
 FT
 XX WO9819698-A1.
 PN
 XX
 PD 14-MAY-1998.
 XX
 XX 04-NOV-1997; 97WO-US20114.
 XX
 XX 30-OCT-1997; 97US-0961405.
 PR
 PR 05-NOV-1996; 96US-0030213.
 XX
 XX (ELITIL) LILLY & CO ELI.
 PA
 XX DiMarchi RD, Efendic S;
 PI WPI; 1998-286595/25.
 XX
 DR Use of glucagon-like peptide-1 and analogues and derivatives - to
 XX reduce body weight, e.g., in treatment of obesity
 XX
 PS Claim 12; Page 18; 42pp; English.
 XX
 CC The patent describes a new method of reducing body weight which
 CC comprises administration of a composition comprising: (i) glucagon-
 CC like peptide-1 (GLP-1); (ii) a GLP-1 analogue; (iii) a GLP-1 derivative;
 CC (iv) an agonist of the GLP-1 receptor; (v) an agonist of the GLP-1
 CC signal transduction cascade; (vi) a compound which stimulates synthesis
 CC of endogenous GLP-1; (vii) a compound that stimulates release of
 CC endogenous GLP-1; or (viii) a salt of a material described in (i)-(vii).
 CC The method may be used for treatment of obesity. The present sequence,
 CC GLP-1 (7-36) amide, represents a preferred GLP-1 compound which can be
 CC used in the method.
 XX
 XX Sequence 30 AA;
 SQ
 Query Match 100.0%; Score 155; DB 19; Length 30;
 Best Local Similarity 100.0%; Pred. No. 1.1e-15;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
 |||||
 DB 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
 |||||
 RESULT 10
 AAW63182
 ID AAW63182 standard; peptide; 30 AA.
 XX
 AC AAW63182;
 XX
 DT 16-SEP-1998 (first entry)
 XX
 DE GLP-1 (7-36).
 XX
 XX Glucagon-like peptide-1; GLP-1; diabetes; lipophilic; tetradeacanoyl;
 KW carboxynonadecanoyl; deoxychoyl; choloyl; lithocholoyl.
 XX
 OS Homo sapiens.
 XX
 XX Key Location/Qualifiers
 FH Modified-site 30
 FT /note= "optionally the C-terminal is in amide form"
 FT
 XX WO9808871-A1.
 PN

PD 05-MAR-1998.
 XX
 XX 22-AUG-1997; 97WO-DK00340.
 XX
 XX 20-DEC-1996; 96DK-0001470.
 PR
 PR 30-AUG-1996; 96DK-0000931.
 PR
 PR 08-NOV-1996; 96DK-0001259.
 XX
 XX (NOVO) NOVO-NORDISK AS.
 PA
 XX Knudsen LB, Nielsen PF, Sorensen PO;
 PI WPI; 1998-239721/21.
 XX
 XX Glucagon-like peptide-1 derivatives which have lipophilic
 PT substituent - exhibit protracted profiles of action relative to
 PT known glucagon-like peptide-1 compounds and are useful in
 PT treatment of diabetes
 XX
 XX Claim 36; Page -; 76pp; English.
 PS
 CC New derivatives of glucagon-like peptide-1 (GLP-1) and its fragments
 CC and their analogues are disclosed in which at least one amino acid
 CC residue of the parent peptide has a lipophilic substituent attached
 CC to it. The GLP-1 fragment is preferably GLP-1(A-C) where A is 1-7 and
 CC C is 35-45. The lipophilic substituent is typically tetradeacanoyl,
 CC carboxynonadecanoyl, deoxychoyl, choloyl or lithocholoyl, and it
 CC is attached e.g. to the epsilon-amino group of a Lys residue in the
 CC peptide. The present sequence represents a preferred parent GLP-1
 CC fragment to which the lipophilic substituent is to be attached.
 CC GLP-1 and its analogues and fragments may be used in treatment of
 CC type 1 and type 2 diabetes. Prior art analogues exhibit a high
 CC clearance rate from the body, which limits their usefulness. The
 CC new lipophilically substituted compounds have a protracted profile
 CC of action compared with known analogues, e.g. GLP-1(7-37).
 CC (N.B. The present sequence is described by name in the patent
 CC specification but is not explicitly shown. It is deduced from the
 CC protein sequence shown in Swiss-Prot entry P01275 using information
 CC given in the patent.)
 XX
 XX Sequence 30 AA;
 SQ
 Query Match 100.0%; Score 155; DB 19; Length 30;
 Best Local Similarity 100.0%; Pred. No. 1.1e-15;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
 |||||
 DB 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
 |||||
 RESULT 11
 AAW50906
 ID AAW50906 standard; peptide; 30 AA.
 XX
 AC AAW50906;
 XX
 DT 17-AUG-1998 (first entry)
 XX
 DE Glucagon-like peptide-1 analogue SEQ ID NO:5.
 XX
 KW Glucagon-like peptide-1; GLP-1 (7-37); GLP-1 analogue; surgical trauma;
 KW stress; hormonal response; insulin resistance; catabolic reaction;
 KW human; incretin hormone.
 XX
 OS Synthetic.
 OS Homo sapiens.
 XX
 XX Key Location/Qualifiers
 FH Modified-site 30
 FT /note= "amidated"
 FT
 XX WO9808873-A1.
 PN

XX 05-MAR-1998.
 XX PD
 XX PF
 XX 26-AUG-1997; 97WO-US15042.
 XX PR
 XX 21-AUG-1997; 97US-0024982.
 XX PR
 XX 30-AUG-1996; 96US-0024982.
 XX PA
 XX (ELIL) LILLY & CO ELI.
 XX PI
 XX Efendic S;
 XX DR
 XX WPI; 1998-239722/21.
 XX
 XX Use of glucagon-like peptide-1 and analogues and their derivatives
 PT - to attenuate post-surgical catabolic changes, insulin resistance
 PT and hormonal responses to stress
 XX
 XX Claim 1; Page 13; 42pp; English.
 XX
 XX The present sequence represents a glucagon-like peptide-1 (GLP-1)
 CC analogue, which is used in the methods of the invention. The methods
 CC are: (1) for attenuating post-surgical catabolic changes and insulin
 CC resistance, comprising administering glucagon-like peptide-1 (GLP-1), a
 CC GLP-1 analogue, a GLP-1 derivative, or a salt of this compound; (2) for
 CC attenuating post-surgical catabolic changes and hormonal responses to
 CC stress, comprising administering a compound which exerts insulinotropic
 CC activity by interacting with the same receptor (or receptors) with which
 CC GLP-1, GLP-1 analogues and GLP-1 derivatives interact in exerting their
 CC insulinotropic activity, and (3) for attenuating post-surgical catabolic
 CC changes and hormonal responses to stress, comprising administering a
 CC compound which enhances insulin sensitivity by interacting with the same
 CC receptor (or receptors) with which GLP-1, GLP-1 analogues and GLP-1
 CC derivatives interact to enhance insulin sensitivity. The processes are
 CC useful for improving recovery after surgery by preventing the catabolic
 CC reaction and insulin resistance caused by surgical trauma and
 CC exacerbated by pre-operative fasting. GLP-1's short half-life, and hence
 CC the need for continuous administration, are not disadvantages, as the
 CC patient is usually hospitalised before surgery, and fluids are
 CC continuously administered parenterally, before, during and after surgery.
 XX
 XX Sequence 30 AA;
 Query Match 100.0%; Score 155; DB 19; Length 30;
 Best Local Similarity 100.0%; Pred. No. 1.1e-15;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAVLVKGK 30
 Db 1 HAEGTFTSDVSSYLEGQAAKEFTIAVLVKGK 30
 RESULT 12
 AAY42935
 ID AAY42935 standard; peptide; 30 AA.
 XX
 XX AAY42935;
 XX
 XX 20-DEC-1999 (first entry)
 XX
 XX Glucagon-like peptide GLP-1 (7-36).
 XX
 XX Glucagon-like peptide; GLP-1; antidiabetic; anti-obesity;
 KW insulinotropic; appetite suppressant.
 XX
 XX Homo sapiens.
 OS
 XX WO9543707-A1.
 PN
 XX 02-SEP-1999.
 PD
 XX 25-FEB-1999; 99WO-DK00085.
 XX
 XX

PR 27-FEB-1998; 98DK-0000263.
 PR 27-FEB-1998; 98DK-0000268.
 PR 08-APR-1998; 98DK-0000508.
 XX
 XX (NOVO) NOVO-NORDISK AS.
 XX
 XX Knudsen LB, Huusfeldt PO, Nielsen PF, Madsen K;
 PI
 XX WPI; 1999-540561/45.
 DR
 XX
 XX New N-modified peptide derivatives, useful for treating diabetes,
 PT insulin resistance and obesity -
 PT
 XX Disclosure; Page 1; 62pp; English.
 PS
 XX New glucagon-like peptide-1 (GLP-1) derivatives are disclosed which
 CC comprise residues 7-45 of GLP-1 or a fragment thereof, preferably
 CC residues 7-36, 7-37 or 7-38 or their analogues, in which (a) a
 CC lipophilic substituent is attached to at least one amino acid and (b)
 CC the N-terminal is substituted with a group containing an optionally
 CC substituted 5- or 6-membered N-heterocycle, e.g. imidazolyl. The
 CC compounds stimulate secretion of insulin, suppress secretion of
 CC glucagon, suppress gastric motility and/or restore glucose compliance
 CC to beta-cells. They are used to treat insulin-dependent or non-insulin-
 CC dependent diabetes mellitus, insulin resistance and obesity. They have
 CC a longer-lasting action than GLP-1 derivatives that lack the lipophilic
 CC substituent. Some of them also exist as partially structured micelle-
 CC like aggregates, so have improved solubility and stability. The present
 CC sequence is a specifically preferred example of a GLP-1 analogue on
 CC which the derivatives are based.
 XX
 XX Sequence 30 AA;
 Query Match 100.0%; Score 155; DB 20; Length 30;
 Best Local Similarity 100.0%; Pred. No. 1.1e-15;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAVLVKGK 30
 Db 1 HAEGTFTSDVSSYLEGQAAKEFTIAVLVKGK 30
 RESULT 13
 AAY27374
 ID AAY27374 standard; peptide; 30 AA.
 XX
 XX AAY27374;
 AC
 XX
 XX 26-NOV-1999 (first entry)
 DT
 XX
 XX Glucagon-like peptide 1 (GLP-1) fragment (residues 7-36).
 DE
 XX
 XX Glucagon; glucagon-like peptide 1; GLP-1; detergent; glycogenolytic;
 KW gluconeogenesis; insulin secretion; diabetes mellitus; obesity;
 KW spasmodic; hypoglycemia.
 XX
 XX Synthetic.
 OS
 XX
 XX Key Location/Qualifiers
 FH Modified-site 30 /note= "C-terminal amide"
 FT
 XX
 XX WO9947160-A1.
 PN
 XX
 XX 23-SEP-1999.
 PD
 XX
 XX 08-MAR-1999; 99WO-DK00115.
 PF
 XX
 XX 13-MAR-1998; 98EP-0610006.
 PR
 XX 18-MAR-1998; 98US-0078422.
 XX
 XX (NOVO) NOVO-NORDISK AS.
 PA
 XX

PI Kaarsholm NC;
 DR WPI; 1999-561858/47.
 XX
 PT Aqueous solution of glucagon or glucagon-like peptide-1 stabilized with
 charged detergent, for treating diabetes or obesity -
 XX
 PS Examples; Page 5; 27pp; English.
 XX
 CC The invention provides an aqueous solution that comprises: (i) at least
 CC one glucagon or glucagon-like peptide-1 (GLP-1), or their analogs or
 CC derivatives (I) and (ii) at least one detergent, other than dodecyl
 CC phosphocholine. The peptide (I) has at least two positive or negative
 CC charges or at least one charge of each sign. Glucagon is involved in
 CC glycogenolytic and gluconeogenesis processes (it also has a spasmodic
 CC effect on smooth muscle) while GLP-1 promotes secretion of insulin and
 CC suppresses that of glucagon. The polar head of detergent interacts with
 CC charged side chains in (I) while the hydrophobic tail interacts with the
 CC hydrophobic patch in (I). The solution is used to treat (non-)insulin-
 CC dependent diabetes mellitus and obesity. Glucagon is also used in
 CC radiology as a spasmodic and for treating hypoglycemia. The detergent
 CC stabilizes the solutions, which are available for immediate use and can
 CC be stored for a long time at 4-25plusC. The solutions may have pH
 CC between 4 and 9, allowing selection of conditions that suppress chemical
 CC degradation. The detergents are made from natural materials so have
 CC better biological compatibility than known detergents. The present
 CC sequence represents a GLP-1 peptide fragment.
 XX
 SQ Sequence 30 AA;
 Query Match 100.0%; Score 155; DB 20; Length 30;
 Best Local Similarity 100.0%; Pred. No. 1.1e-15;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
 DB 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
 RESULT 14
 AAY39773
 ID AAY39773 standard; peptide; 30 AA.
 AC AAY39773;
 XX
 DT 26-NOV-1999 (first entry)
 XX
 DE Glucagon like peptide-1 (7-36).
 XX
 KW Glucagon-like peptide-1; GLP-1; appetite suppression; human; diabetes;
 KW spontaneous food intake; therapy.
 XX
 OS Homo sapiens.
 XX
 FH Key Location/Qualifiers
 FT Misc-difference 29 /note= "amidated"
 FT
 PN WO9947161-A1.
 XX
 PD 23-SEP-1999.
 XX
 PF 16-MAR-1999; 99WO-US05571.
 XX
 PR 19-MAR-1998; 98US-0078544.
 XX
 PA (BION-) BIONEERASKA INC.
 XX
 PI Goke B, Beglinger C, Coolidge TR;
 XX
 DR WPI; 1999-561859/47.
 XX
 PT New composition for controlling food intake especially in diabetes

PT sufferers -
 XX Claim 5; Page 22; 35pp; English.
 XX
 CC This sequence represents a glucagon-like peptide-1 sequence used in the
 CC composition of the invention. The composition is for appetite
 CC suppression, and comprises a compound binding to a GLP-1 receptor and a
 CC pharmaceutical carrier. The composition can be administered to control
 CC appetite and/or reduce spontaneous food intake in humans, especially in
 CC humans with diabetes.
 XX
 SQ Sequence 30 AA;
 Query Match 100.0%; Score 155; DB 20; Length 30;
 Best Local Similarity 100.0%; Pred. No. 1.1e-15;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
 DB 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
 RESULT 15
 AAY34198
 ID AAY34198 standard; peptide; 30 AA.
 XX
 AC AAY34198;
 XX
 DT 16-NOV-1999 (first entry)
 XX
 DE GLP-1 mutant peptide, GLP-1(7-36).
 XX
 KW GLP-1; Glucagon-like peptide-1; human; type I diabetes; type II diabetes;
 KW obesity; therapy; mutein.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Misc-difference 30 /note= "optionally amidated"
 FT
 PN WO9943341-A1.
 XX
 PD 02-SEP-1999.
 XX
 PF 25-FEB-1999; 99WO-DK00084.
 XX
 PR 27-FEB-1998; 98DK-0000268.
 PR 27-FEB-1998; 98DK-0000272.
 XX
 PA (NOVO) NOVO-NORDISK AS.
 XX
 PI Knudsen LB, Huusfeldt PO, Nielsen PF, Kaarsholm NC, Olsen HB;
 PI Bjorn SE;
 XX
 DR WPI; 1999-540500/45.
 XX
 CC Composition containing stabilized derivatives of glucagon-like
 CC peptide-1 with high alpha-helix content, for treating diabetes and
 CC obesity
 XX
 CC Claim 30; Page -; 63pp; English.
 XX
 CC This sequence represents a mutant of the human glucagon-like peptide-1
 CC (GLP-1) and has a helix content (determined by circular dichroism at
 CC 222 nm in water at 20-24 degrees C) over 25, preferably 25-50, % at
 CC peptide concentration about 10 microM. The GLP-1 mutant can be used in a
 CC pharmaceutical composition of the invention. The compositions are used to
 CC treat diabetes (both type I and particularly type II) and/or obesity.
 CC They have better solubility and/or stability (against endogenous
 CC diaminopeptidyl peptidase) than parent peptides, with long persistence in
 CC the plasma and retention of biological activity. They form partially

CC structured micelle-like aggregates in solution, with the helix content
CC practically independent of concentration.
CC NOTE: This sequence was created from the human GLP-1 sequence using
CC information given in the specification.

XX

SQ Sequence 30 AA;

Query Match 100.0%; Score 155; DB 20; Length 30;
Best Local Similarity 100.0%; Pred. No. 1.1e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGFTSDVSSYLEGQAAKEFIAWLVKGR 30

Db 1 HAEGFTSDVSSYLEGQAAKEFIAWLVKGR 30

Search completed: January 7, 2003, 16:23:33
Job time : 37 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: January 7, 2003, 16:22:39 ; Search time 15 Seconds
(without alignments)
192.269 Million cell updates/sec

Title: US-09-830-323-1

Perfect score: 155

Sequence: 1 HAEGTFTSDVSSYLEGQAQKEFIWLKVR 30

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283224 seqs, 96134422 residues

Total number of hits satisfying chosen parameters: 283224

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

PIR_73: *
1: pir1.*
2: pir2.*
3: pir3.*
4: pir4.*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------|-------|-------------|--------|----------|-----------------------|
| 1 | 155 | 100.0 | 158 | 1 GPG | glucagon precursor |
| 2 | 155 | 100.0 | 180 | 1 GCHU | glucagon precursor |
| 3 | 155 | 100.0 | 180 | 1 GCGP | glucagon precursor |
| 4 | 155 | 100.0 | 180 | 1 GRTDU | glucagon precursor |
| 5 | 155 | 100.0 | 180 | 1 GCFT | glucagon precursor |
| 6 | 155 | 100.0 | 180 | 1 GCHY | glucagon precursor |
| 7 | 155 | 100.0 | 180 | 1 GCHO | glucagon precursor |
| 8 | 155 | 100.0 | 180 | 2 A57294 | glucagon precursor |
| 9 | 143 | 92.3 | 151 | 1 GCGH | glucagon precursor |
| 10 | 143 | 92.3 | 206 | 2 I51301 | proglucagon - chic |
| 11 | 129 | 83.2 | 101 | 1 GCFGB | glucagon precursor |
| 12 | 126 | 81.3 | 30 | 2 B61125 | glucagon-like pept |
| 13 | 126 | 81.3 | 30 | 2 C61125 | glucagon-like pept |
| 14 | 120 | 77.4 | 122 | 1 GCAF2 | glucagon 2 precursor |
| 15 | 118 | 76.1 | 66 | 2 I51093 | glucagon - chinook |
| 16 | 118 | 76.1 | 178 | 2 I51058 | glucagon I precursor |
| 17 | 117 | 75.5 | 63 | 1 GLIDC | glucagon precursor |
| 18 | 116 | 74.8 | 72 | 1 GCXA | glucagon precursor |
| 19 | 113 | 72.9 | 60 | 1 GCNC | glucagon precursor |
| 20 | 113 | 72.9 | 178 | 2 I51057 | glucagon II precursor |
| 21 | 111 | 71.6 | 30 | 2 S44473 | glucagon-like pept |
| 22 | 103 | 66.5 | 87 | 1 GCFIS | glucagon precursor |
| 23 | 97 | 62.6 | 29 | 2 S07211 | glucagon - marbled |
| 24 | 96 | 61.9 | 31 | 2 S44472 | glucagon G2 - Nort |
| 25 | 96 | 61.9 | 124 | 1 GCAF | glucagon I precursor |
| 26 | 95 | 61.3 | 29 | 1 GPDF | glucagon - smaller |
| 27 | 94 | 60.6 | 31 | 2 S44471 | glucagon G1 - Nort |
| 28 | 93 | 60.0 | 29 | 1 GCEN | glucagon - elephant |
| 29 | 90 | 58.1 | 29 | 1 GCPV | glucagon - North A |

| | | | | | |
|----|----|------|----|----------|---------------------|
| 30 | 90 | 58.1 | 29 | 2 A91740 | glucagon - turkey |
| 31 | 90 | 58.1 | 29 | 2 A91741 | glucagon - rabbit |
| 32 | 90 | 58.1 | 29 | 2 A91742 | glucagon - Arabian |
| 33 | 90 | 58.1 | 29 | 2 C3258 | glucagon - common |
| 34 | 90 | 58.1 | 69 | 1 GCDG69 | glucagon-69 - dog |
| 35 | 88 | 56.8 | 29 | 1 GCDK | glucagon - duck |
| 36 | 88 | 56.8 | 29 | 1 A61583 | glucagon - ostrich |
| 37 | 88 | 56.8 | 29 | 1 GCTTS | glucagon - slider |
| 38 | 88 | 56.8 | 29 | 2 C60840 | glucagon I - Europ |
| 39 | 87 | 56.1 | 29 | 1 GCCB | glucagon - Chinch |
| 40 | 87 | 56.1 | 39 | 1 HWGH4G | extendin-4 - Gila m |
| 41 | 86 | 55.5 | 29 | 1 GCFLE | glucagon - Europea |
| 42 | 86 | 55.5 | 29 | 2 A61135 | glucagon - bigeye |
| 43 | 85 | 54.8 | 39 | 1 HWGH3Z | extendin-3 - Mexica |
| 44 | 83 | 53.5 | 29 | 2 S39018 | glucagon - bowfin |
| 45 | 79 | 51.0 | 36 | 1 GCFI | glucagon-36 - spot |

ALIGNMENTS

RESULT 1

CCPG

Glucagon precursor - pig (fragment)

N;Alternate names: glicentin; oxyntomodulin

N;Contains: glicentin-related peptide; glucagon; glucagon-37 (oxyntomodulin); glucagon-69

C;Species: Sus scrofa domestica (domestic pig)

C;Date: 17-Dec-1982 #sequence revision 31-Mar-1993 #text_change 20-Mar-1998

C;Accession: A01540; A60312; A91781; B32614; A28064

R;Thim, L.; Moody, A.J.

Regul. Pept. 2, 139-150, 1981

A;Title: The primary structure of porcine glicentin (proglucagon).

A;Reference number: A94233; MUID:81248172; PMID:6894800

A;Accession: A01540

A;Molecule type: protein

A;Residues: 1-69 <TH1>

R;Thim, L.; Moody, A.J.

Regul. Pept. Suppl. 2, S33, 1983

A;Title: Primary structure of a possible porcine proglucagon fragment.

A;Reference number: A60312

A;Accession: A60312

A;Molecule type: protein

A;Residues: 1-30 <TH2>

A;Note: this peptide is co-secreted with glucagon from the pancreas

R;Bromer, W.W.; Sinn, L.G.; Behrens, O.K.

J. Am. Chem. Soc. 79, 2807-2810, 1957

A;Title: The amino acid sequence of glucagon. V. Location of amide groups, acid degradation

A;Reference number: A91781

A;Accession: A91781

A;Molecule type: protein

A;Residues: 33-61 <BRO>

R;Orskov, C.; Barsani, M.; Johnsen, A.H.; Hojrup, P.; Holst, J.J.

J. Biol. Chem. 264, 12826-12829, 1989

A;Title: Complete sequences of glucagon-like peptide-1 from human and pig small intestine

A;Reference number: A92732; MUID:89327238; PMID:2753890

A;Accession: B32614

A;Molecule type: protein

A;Residues: 78-107 <ORS>

R;Buhl, T.; Thim, L.; Kofod, H.; Orskov, C.; Harling, H.; Holst, J.J.

J. Biol. Chem. 263, 8621-8624, 1988

A;Title: Naturally occurring products of proglucagon 111-160 in the porcine and human sma

A;Reference number: A28064; MUID:88243712; PMID:3379036

A;Accession: A28064

A;Molecule type: protein

A;Residues: 111-158 <BUH>

C;Comment: X's represent missing amino acids, mostly basic, that are predicted to exist

C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; interesti

F;1-69/Product: glucagon-69 #status experimental <G69>

F;1-30/Region: glicentin-related peptide #status experimental

F;33-69/Product: glucagon-37 #status predicted <G37>

F;33-61/Product: glucagon #status experimental <GCN>

F;78-107/Product: glucagon-like peptide 1 #status experimental <GL1>

F:126-158/Product: glucagon-like peptide 2 #status experimental <GL2>
F:107/Modified site: amidated carboxyl end (Arg) (amide in mature form from following gl

Query Match 100.0%; Score 155; DB 1; Length 158;
Best Local Similarity 100.0%; Pred. No. 5.5e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
|||||
Db 78 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 107
|||||

RESULT 2
GCHU
glucagon precursor [validated] - human
N;Contains: glycine; glycinin-related polypeptide (GRPP); glucagon; glucagon-like pep
ke peptide 1 (tGLP1)
C;Species: Homo sapiens (man)
C;Date: 24-Apr-1984 #sequence revision 31-Mar-1993 #text change 08-Dec-2000
C;Accession: A24377; A44197; A30875; A32614; A01541; S23309
R;White, J.W.; Saunders, G.F.
Nucleic Acids Res. 14, 4719-4730, 1986
A;Title: Structure of the human glucagon gene.
A;Reference number: A24377; MUID:86259053; PMID:3725587
A;Accession: A24377
A;Molecule type: DNA
A;Residues: 1-180 <WHI>
A;Cross-references: GB:X03991
R;Bell, G.I.; Sanchez-Pescador, R.; Laybourn, P.J.; Najarian, R.C.
Nature 304, 368-371, 1983
A;Title: Exon duplication and divergence in the human preproglucagon gene.
A;Reference number: A44197; MUID:83271477; PMID:6877358
A;Accession: A44197
A;Molecule type: DNA
A;Residues: 1-179 <BEL>
A;Cross-references: GB:V01515; NID:g31777; PIDN:CAA24759.1; PID:g31778
R;Drucker, D.J.; Asa, S.
J. Biol. Chem. 263, 13475-13478, 1988
A;Title: Glucagon gene expression in vertebrate brain.
A;Reference number: A30875; MUID:88330860; PMID:2901414
A;Accession: A30875
A;Molecule type: mRNA
A;Residues: 1-180 <DRU>
A;Cross-references: GB:J04040; NID:g183269; PIDN:AAA52567.1; PID:g183270
R;Orskov, C.; Bersani, M.; Johnsen, A.H.; Hojrup, P.; Holst, J.J.
J. Biol. Chem. 264, 12826-12829, 1989
A;Title: Complete sequences of glucagon-like peptide-1 from human and pig small intestine
A;Reference number: A92732; MUID:89327238; PMID:2753890
A;Accession: A32614
A;Molecule type: protein
R;Thomsen, J.; Kristiansen, K.; Brunfeldt, K.; Sundby, F.
FEBS Lett. 21, 315-319, 1972
A;Title: The amino acid sequence of human glucagon.
A;Reference number: A91373
A;Accession: A01541
A;Molecule type: protein
R;Tsugita, A.; Takamoto, K.; Kamo, M.; Iwade, H.
Eur. J. Biochem. 206, 691-696, 1992
A;Title: C-terminal sequencing of protein. A novel partial acid hydrolysis and analysis
A;Reference number: S23188; MUID:92298996; PMID:1606956
A;Accession: S23309
A;Molecule type: protein
A;Residues: 53-81 <TSU>
C;Comment: In pancreatic alpha-cells, proglucagon is processed to glucin-related poly
stinal L cells, proglucagon is processed to truncated glucagon-like peptide 1, glucagon-
dulin.
C;Genetics:
A;Gene: GDB:CGG
A;Cross-references: GDB:119265; OMIM:138030
A;Map position: 2q36-2q37
A;Introns: 31/2; 85/2; 131/2; 179/2

C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; intest
F:1-20/Domain: signal sequence #status predicted <SIG>
F:21-180/Product: proglucagon #status experimental <PGC>
F:21-89/Product: glycinin #status experimental <GLN>
F:21-50/Product: glycinin-related polypeptide #status predicted <GRPP>
F:53-89/Product: oxyntomodulin #status experimental <OXN>
F:53-81/Product: glucagon #status experimental <GCN>
F:92-178/Product: major proglucagon fragment #status experimental <MPGF>
F:92-127/Product: glucagon-like peptide 1 #status experimental <GL1>
F:98-127/Product: truncated glucagon-like peptide 1 #status experimental <TGL>
F:146-178/Product: glucagon-like peptide 2 #status predicted <GL2>
F:127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following g

Query Match 100.0%; Score 155; DB 1; Length 180;
Best Local Similarity 100.0%; Pred. No. 6.3e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
|||||
Db 98 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 127
|||||

RESULT 3
GCGP
glucagon precursor - guinea pig
N;Alternate names: oxyntomodulin
N;Contains: glycinin-related peptide; glucagon; glucagon-37 (oxyntomodulin); glucagon-
C;Species: Cavia porcellus (guinea pig)
C;Date: 30-Sep-1987 #sequence revision 31-Dec-1992 #text_change 16-Jun-2000
C;Accession: A24856; A23849; A60323
R;Seino, S.; Welsh, M.; Bell, G.I.; Chan, S.J.; Steiner, D.F.
FEBS Lett. 203, 25-30, 1986
A;Title: Mutations in the guinea pig preproglucagon gene are restricted to a specific p
A;Reference number: A24856; MUID:86248118; PMID:3755107
A;Accession: A24856
A;Molecule type: mRNA
A;Residues: 1-180 <SEI>
A;Cross-references: DDBJ:D00014; GB:N00014; NID:g220288; PIDN:BAA00010.1; PID:g220289
R;Huang, C.G.; Eng, J.; Pan, Y.C.E.; Hulmes, J.D.; Yalow, R.S.
Diabetes 35, 508-512, 1986
A;Title: Guinea pig glucagon differs from other mammalian glucagons.
A;Reference number: A23849; MUID:86165412; PMID:3956884
A;Accession: A23849
A;Molecule type: protein
A;Residues: 53-81 <HUA>
R;Conlon, J.M.; Hansen, H.F.; Schwartz, T.W.
Regul. Pept. 11, 309-320, 1985
A;Title: Primary structure of glucagon and a partial sequence of oxyntomodulin (glucago
A;Reference number: A60323; MUID:86017849; PMID:4048553
A;Accession: A60323
A;Molecule type: protein
A;Residues: 53-81 <CON>
A;Note: Glucagon-37 was not completely sequenced
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pancr
F:1-20/Domain: signal sequence #status predicted <SIG>
F:21-180/Product: proglucagon #status predicted <PGC>
F:21-50/Region: glycinin-related peptide #status predicted
F:53-89/Product: glucagon-37 (oxyntomodulin) #status experimental <G37>
F:53-81/Product: glucagon #status experimental <GCN>
F:98-127/Product: glucagon-like peptide 1 #status predicted <GL1>
F:146-178/Product: glucagon-like peptide 2 #status predicted <GL2>
F:127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following g

Query Match 100.0%; Score 155; DB 1; Length 180;
Best Local Similarity 100.0%; Pred. No. 6.3e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
|||||
Db 98 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 127
|||||

RESULT 4
GCRDU
N;Contains: glucagon precursor - degu
C;Species: Octodon degus (degu)
C;Date: 31-Mar-1993 #sequence_revision 31-Mar-1993 #text_change 18-Jun-1999
C;Accession: C36118
R;Nishi, M.; Steiner, D.F.
Mol. Endocrinol. 4, 1192-1198, 1990
A;Title: Cloning of complementary DNAs encoding islet amyloid polypeptide, insulin, and
A;Reference number: A36118; MUID:91155952; PMID:2293024
A;Accession: C36118
A;Molecule type: mRNA
A;Residues: 1-180 <NIS>
A;Cross-references: GB:M57688; NID:g202467; PIDN:AAA40588.1; PID:g202468
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pancre
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-180/Product: proglucagon #status predicted <SIG>
F;53-81/Product: glucagon-like peptide 1 #status predicted <GCN>
F;53-81/Product: glucagon-like peptide 2 #status predicted <GCN>
F;98-127/Product: glucagon-like peptide 1 #status predicted <GL1>
F;146-178/Product: glucagon-like peptide 2 #status predicted <GL2>
F;127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following gl
Query Match 100.0%; Score 155; DB 1; Length 180;
Best Local Similarity 100.0%; Pred. No. 6.3e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30
Db 98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127
RESULT 5
GCRU
N;Contains: glucagon precursor - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Sep-1987 #sequence_revision 30-Sep-1987 #text_change 26-Feb-1999
C;Accession: A22655; A25190; A44198
R;Heinrich, G.; Gros, P.; Habener, J.F.
J. Biol. Chem. 259, 14082-14087, 1984
A;Title: Glucagon gene sequence: four of six exons encode separate functional domains of
A;Reference number: A22655; MUID:85054853; PMID:6094539
A;Accession: A22655
A;Molecule type: DNA
A;Residues: 1-180 <HBI>
A;Cross-references: EMBL:K02809
A;Note: the authors translated the codon TTG for residue 10 as Glu and ACC for residue S
R;Mojsos, S.; Heinrich, G.; Wilson, I.B.; Ravazzola, M.; Orci, L.; Habener, J.F.
J. Biol. Chem. 261, 11880-11889, 1986
A;Title: Preproglucagon gene expression in pancreas and intestine diversifies at the lev
A;Reference number: A25190; MUID:86304324; PMID:3528148
A;Accession: A25190
A;Status: not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-180 <MOJ>
R;Heinrich, G.; Gros, P.; Lund, P.K.; Bentley, R.C.; Habener, J.F.
Endocrinology 115, 2176-2181, 1984
A;Title: Pre-proglucagon messenger ribonucleic acid: nucleotide and encoded amino acid s
A;Reference number: A44198; MUID:85051023; PMID:6548696
A;Accession: A44198
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-180 <H2>
A;Cross-references: GB:K02809; GB:K02810; GB:K02811; GB:K02812
C;Genetics:
A;Introns: 31/2; 85/2; 131/2; 179/2
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pancre
F;1-20/Domain: signal sequence #status predicted <SIG>

F;21-180/Product: proglucagon #status predicted <PGC>
F;53-81/Product: glucagon-like peptide #status predicted <GCN>
F;98-127/Product: glucagon-like peptide 1 #status predicted <GL1>
F;146-180/Product: glucagon-like peptide 2 #status predicted <GL2>
F;127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following gl
Query Match 100.0%; Score 155; DB 1; Length 180;
Best Local Similarity 100.0%; Pred. No. 6.3e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30
Db 98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127
RESULT 6
GCHY
N;Contains: glucagon precursor - golden hamster
C;Species: Mesocricetus auratus (golden hamster)
C;Date: 13-Jun-1983 #sequence_revision 13-Jun-1983 #text_change 20-Mar-1998
C;Accession: A01539
R;Bell, G.I.; Santerre, R.F.; Mullenbach, G.T.
Nature 302, 716-718, 1983
A;Title: Hamster preproglucagon contains the sequence of glucagon and two related peptide
A;Reference number: A01539; MUID:83167563; PMID:6835407
A;Accession: A01539
A;Molecule type: mRNA
A;Residues: 1-180 <BEL>
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pancre
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-180/Product: proglucagon #status predicted <PGC>
F;53-81/Product: glucagon-like peptide #status predicted <GCN>
F;98-127/Product: glucagon-like peptide 1 #status predicted <GL1>
F;146-180/Product: glucagon-like peptide 2 #status predicted <GL2>
F;127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following gl
Query Match 100.0%; Score 155; DB 1; Length 180;
Best Local Similarity 100.0%; Pred. No. 6.3e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30
Db 98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127
RESULT 7
GCHY
N;Contains: glucagon precursor - bovine
C;Species: Bos primigenius taurus (cattle)
C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 20-Mar-1998
C;Accession: A93970; A92081; A01538
R;Lopez, L.C.; Frazier, M.L.; Su, C.J.; Kumar, A.; Saunders, G.F.
Proc. Natl. Acad. Sci. U.S.A. 80, 5485-5489, 1983
A;Title: Mammalian pancreatic preproglucagon contains three glucagon-related peptides.
A;Reference number: A93970; MUID:83299996; PMID:6577439
A;Accession: A93970
A;Molecule type: mRNA
A;Residues: 1-180 <LOP>
A;Cross-references: EMBL:K00107
R;Bromer, W.W.; Boucher, M.E.; Koffenberger Jr., J.E.
J. Biol. Chem. 246, 2822-2827, 1971
A;Title: Amino acid sequence of bovine glucagon.
A;Reference number: A92081; MUID:71166445; PMID:5102927
A;Accession: A92081
A;Molecule type: protein
A;Residues: 53-81 <BRO>
C;Superfamily: glucagon

C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pancreas

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Query Match      100.0%; Score 155; DB 1; Length 180;
Best Local Similarity 100.0%; Pred. NO. 6.3e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

Qy 1 HAEGTFTSDVSSYLEGQAQKEFIAWLVKGR 30
|||
pb 98 HAEGTFTSDVSSYLEGQAQKEFIAWLVKGR 127

RESULT 8

glucagon precursor - mouse
A57294
C:Species: Mus musculus (house mouse)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 16-Jul-1999
C:Accession: A57294; 949903
R:Rothenberg, M.E.; Elerfson, C.D.; Klein, K.; Zhou, Y.; Lindberg, I.; McDonald, J.K.; J. Biol. Chem. 270, 10136-10146, 1995
A:Title: Processing of mouse proglucagon by recombinant prohormone convertase 1 and immu
A:Reference number: A57294; MUID:95247722; PMID:7730317
A:Accession: A57294
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-180 <ROT>
A:Cross-references: EMBL:Z46845; NID:g599880; PIDN:CAA86902.1; PID:g599881
C:Superfamily: glucagon
C:Keywords: carbohydrate metabolism; duplication; hormone; pancreas

```
Query Match      100.0%; Score 155; DB 2; Length 180;
Best Local Similarity 100.0%; Pred. No. 6.3e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

Qy 1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30
|||
db 98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127

RESIII.T 9

GCCH
glucagon precursor - chicken
N:Contains: glucagon; glucagon-like peptide 1
C:Species: Gallus gallus (chicken)
C:Date: 31-Dec-1991 #sequence revision 31-Mar-1993 #text_change 18-Jun-1999
C:Accession: S09992; A92189; A60836; A01542
R:Hasegawa, S.; Terazono, K.; Natta, K.; Takada, T.; Yamamoto, H.; Okamoto, H.
FEBS Lett. 264, 117-120, 1990
A:Title: Nucleotide sequence determination of chicken glucagon precursor cDNA. Chicken P
A:Reference number: S09992; MUID:90249492; PMID:2338135

A;Accession: 606722NA
A;Molecule type: mRNA
A;Residues: 1-151 <RNA>
A;Cross-references: EMBL:X07339; PIDN:CAA68827.1; PID:963750
R;Pollock, H.G.; Kimmel, J.R.
J. Biol. Chem. 250, 9377-9380, 1975
A;Title: Chicken glucagon. Isolation and amino acid sequence studies.
A;Reference number: A92189; MUID:76069271; PMID:1194290

A;Accession: A52163
A;Molecule type: protein
A;Residues: 55-83 <POL>
R;Huang, J.; Eng, J.; Yalow, R.S.
Horm. Metab. Res. 19; 542-544, 1987
A;Title: Chicken glucagon: sequence and potency in receptor assay.
A;Reference number: A60836; PMID:88113418; PMID:2828209
A;Accession: A60836
A;Molecule type: protein

A:Residues: 55-83 <HUA>
C:Superfamily: glucagon
C:Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pancreas
F:1-22/Domain: signal sequence #status predicted <SIG>
F:223-151/Product: proglucagon #status predicted <PGC>
F:155-83/Product: glucagon #status experimental <GCN>
F:118-147/Product: glucagon-like peptide 1 #status predicted <GL1>
F:147/Modified site: amidated carboxyl end (Arg) (amide in mature form from following 9

| | | | | |
|--------------------------|-------|--------------------|--------|-------------|
| Query Match | 92.3% | Score 143; | DB 1; | Length 151; |
| Best Local Similarity | 86.7% | Pred. No. 2.8e-13; | | |
| Matches 26; Conservative | 3; | Mismatches 1; | Indels | |

Qy 1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30
|||||:|||||
Db 118 HAEGTFTSDTSSYLEGQAAKEFIAWLVNGR 147

RESULT 10

nucleol 10
 151301
 proglucagon - chicken
 C:Species: Gallus gallus (chicken)
 C:Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 16-Jul-1999
 C:Accession: I51301
 R:Irwin, D.M.; Wong, J.
 Mol. Endocrinol. 9, 267-277, 1995
 A:Title: Trout and chicken proglucagon: alternative splicing generates mRNA transcripts
 A:Reference number: A55895; MUID:95295739; PMID:7776976
 A:Accession: I51301
 A>Status: preliminary; translated from GE/EMBL/DBJ
 A:Molecule type: mRNA
 A:Residues: 1-206 <IRW>
 A:Cross-references: GB:S78477; NID:G999386; PIDN:AAB34506.1; PID:G999387
 C:Superfamily: glucagon
 C:Keywords: duplication

Query Match 92.3%; Score 143; DB 2; Length 206;
Best Local Similarity 86.7%; Pred. No. 4e-13;
Matches 26; Conservative 3; Mismatches 1; Indels

QY 1 HAEGTTSDVSSYLEGQAAKEFIAWLVKGR 30
 |||||:::|||||
Dd 118 HAEGTTSPTSYLEGAOAAKEFIAWLVNGR 147

RESULT 11

NCBI: 11
 GCFGB
 glucagon precursor - bullfrog (fragments)
 N:Alternate names: oxyntomodulin
 N:Contains: glucagon; glucagon-36 (oxyntomodulin); glucagon-like peptide 1; glucagon-like
 C:Species: *Rana catesbeiana* (bullfrog)
 C:Date: 31-Mar-1993 #sequence revision 31-Mar-1993 #text_change 20-Mar-1998
 C:Accession: D28091; C28091; D28091
 R:Pollock, H.G.; Hamilton, J.W.; Rouse, J.B.; Ebner, K.E.; Rawitch, A.B.
 J. Biol. Chem. 263, 9746-9751, 1998
 A:Title: Isolation of peptide hormones from the pancreas of the bullfrog (*Rana catesbeiana*)
 A:Reference number: A93730; PMID:88257102; PMID:3260236

A:Reference numbers: A921307, P03AD:60237102, P1WD:3260236
A:Accession: B28091
A:Molecule type: protein
A:Residues: 1-36 <PO2>
A:Accession: C28091
A:Molecule type: protein
A:Residues: 37-68 <POL>
A:Accession: D28091
A:Molecule type: protein
A:Residues: 69-101 <PO3>
C:Superfamily: glucagon
C:Keywords: carbohydrate metabolism; duplication; hormone; pancreas
F:1-36/Product: glucagon-36 (oxyntomodulin) #status experimental <G36>
F:1-29/Product: glucagon #status predicted <GCN>
F:37-67/Product: glucagon-like peptide 1 #status experimental <GL1>
F:69-101/Product: glucagon-like peptide 2 #status experimental <GL2>

```

A;Reference number: A05150; MUID:83135785; PMID:6338015
A;Accession: A05150
A;Molecule type: mRNA
A;Residues: 1-122 <LUN>
A;Cross-references: GB:J00933; NID:G64021; PIDN:CAA23905.1; PID:G64022
C;Superfamily: glucagon
C;Keywords: carbohydrate metabolism; duplication; hormone; pancreas
F;1-21/Domain: signal sequence #status predicted <SIG>
F;22-122/Product: proglucagon 2 #status predicted <PGC2>
F;52-80/Product: glucagon #status predicted <GCN>
F;89-119/Product: glucagon-like peptide 1 #status predicted <GLI>

Query Match 77.4%; Score 120; DB 1; Length 122;
Best Local Similarity 70.0%; Pred. No. 4.8e-10;
Matches 21; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

QY 1 HAECTFTSDVSSYLEGQAAKEFIANLVKGR 30
||:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|
DB 89 HAQGTYSDEVSSYLQDQAADKDFVSWLKAGR 118

RESULT 15
I51093
Glucagon - chinook salmon (fragment)
C;Species: Oncorhynchus tshawytscha (chinook salmon)
C;Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 16-Jul-1999
C;Accession: I51093
R;Irwin, D.M.; Wong, J.
Mol. Endocrinol. 9, 267-277, 1995
A;Title: Trout and chicken proglucagon: alternative splicing generates mRNA tra
A;Reference number: A55895; MUID:95295739; PMID:7776976
A;Accession: I51093
A;Molecule type: mRNA
A;Residues: 1-66 <IR>
A;Cross-references: EMBL:U19920; NID:G736366; PIDN:AAC59670.1; PID:G736367
C;Superfamily: glucagon
C;Keywords: duplication

Query Match 76.1%; Score 118; DB 2; Length 66;
Best Local Similarity 66.7%; Pred. No. 4.8e-10;
Matches 20; Conservative 7; Mismatches 3; Indels 0; Gaps 0;

QY 1 HAECTFTSDVSSYLEGQAAKEFIANLVKGR 30
||:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|
DB 33 HAQGTYSDEVSSYLQDQAADKDFVSWLKAGR 62

Search completed: January 7, 2003, 16:24:48
Job time : 15 secs

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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: January 7, 2003, 16:19:44 ; Search time 10 Seconds
(without alignments)
124.429 Million cell updates/sec

Title: US-09-830-323-1

Perfect score: 155

Sequence: 1 HAECTFTSDVSSYLEGQAKEFIWLKGR 30

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 112892 seqs, 41476328 residues

Total number of hits satisfying chosen parameters: 112892

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SwissProt_40.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|--------------|--------------------|
| 1 | 155 | 100.0 | 158 | 1 GLUC_PIG | P01274 sus scrofa |
| 2 | 155 | 100.0 | 180 | 1 GLUC_BOVIN | P01272 bos taurus |
| 3 | 155 | 100.0 | 180 | 1 GLUC_CAVPO | P05110 cavia porce |
| 4 | 155 | 100.0 | 180 | 1 GLUC_HUMAN | P01275 homo sapien |
| 5 | 155 | 100.0 | 180 | 1 GLUC_MESAU | P01273 mesocricetu |
| 6 | 155 | 100.0 | 180 | 1 GLUC_MOUSE | P55095 mus musculu |
| 7 | 155 | 100.0 | 180 | 1 GLUC_OCTDE | P22890 octodon deg |
| 8 | 155 | 100.0 | 180 | 1 GLUC_RAT | P06883 rattus norv |
| 9 | 143 | 92.3 | 151 | 1 GLUC_CHICK | P01277 gallus gall |
| 10 | 129 | 83.2 | 103 | 1 GLUC_RANCA | P15438 rana catesb |
| 11 | 126 | 81.3 | 30 | 1 GLUM_ANGAN | P41521 anguilla an |
| 12 | 120 | 77.4 | 122 | 1 GLU2_LOPAM | P04092 lophius ame |
| 13 | 116 | 74.8 | 71 | 1 GLUC_ICTPU | P04093 ictalurus p |
| 14 | 116 | 74.8 | 78 | 1 GLUC_LEPSP | P09566 lepisosteus |
| 15 | 114 | 73.5 | 71 | 1 GLUC_FIAME | P09566 lepisosteus |
| 16 | 113 | 72.9 | 68 | 1 GLUC_ONCKI | P81880 piaractus m |
| 17 | 110.5 | 71.3 | 33 | 1 GLU2_ORENI | P07449 oncorhynch |
| 18 | 110 | 71.0 | 121 | 1 GLUC_CARAU | P79695 carassius a |
| 19 | 103 | 66.5 | 96 | 1 GLUC_MYOSC | P09686 myoxcephal |
| 20 | 97 | 62.6 | 29 | 1 GLUC_TORMA | P09567 torpedo mar |
| 21 | 96 | 61.9 | 124 | 1 GLU1_LOPAM | P09687 lophius ame |
| 22 | 95 | 61.3 | 29 | 1 GLUC_SCYCA | P09687 scyllorhinu |
| 23 | 93 | 60.0 | 29 | 1 GLUC_CALMI | P13189 callorhynch |
| 24 | 90 | 58.1 | 29 | 1 GLUC_DIDMA | P13108 didelphis m |
| 25 | 90 | 58.1 | 29 | 1 GLUC_LAMFL | O9ptq9 lampetra fl |
| 26 | 90 | 58.1 | 29 | 1 GLUC_RABIT | P25449 oryctolagus |
| 27 | 90 | 58.1 | 36 | 1 GLU1_ORENI | P81026 oreochromis |
| 28 | 90 | 58.1 | 69 | 1 GLUC_CANFA | P29794 canis famil |
| 29 | 88 | 56.8 | 29 | 1 GLUC_ANAPL | P01276 anas platyr |
| 30 | 87 | 56.1 | 29 | 1 GLUC_CHIBR | P31297 chinchilla |
| 31 | 87 | 56.1 | 87 | 1 EXP4_HELSE | P26349 heloderma s |
| 32 | 86 | 55.5 | 29 | 1 GLUC_PLAFE | P23062 platichthys |
| 33 | 85 | 54.8 | 39 | 1 EXP3_HELHO | P20394 heloderma h |

RESULT 1

| ID | GLUC_PIG | STANDARD; | PRT; | 158 AA. |
|----|---|-----------|------|---------|
| AC | P01274; | | | |
| DT | 21-JUL-1986 (Rel. 01, Created) | | | |
| DT | 01-NOV-1990 (Rel. 16, Last sequence update) | | | |
| DT | 16-OCT-2001 (Rel. 40, Last annotation update) | | | |
| DE | Glucagon precursor [Contains: Glucicentin; Glucicentin-related polypeptide (GRP); Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2 (GLP2)] (Fragment). | | | |
| DE | peptide 2 (GLP2)] (Fragment). | | | |
| GN | GCG. | | | |
| OS | Sus scrofa (Pig). | | | |
| OC | Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; | | | |
| OC | Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus. | | | |
| OX | NCBI_TaxID=9823; | | | |
| RN | [1] | | | |
| RP | SEQUENCE OF 1-69. | | | |
| RX | MEDLINE=81248172; PubMed=6894800; | | | |
| RA | Thim L., Moody A.J.; | | | |
| RT | "The primary structure of porcine glucicentin (proglucagon)."; | | | |
| RL | Regul. Pept. 2:139-150(1981). | | | |
| RN | [2] | | | |
| RP | SEQUENCE OF 1-69. | | | |
| RX | MEDLINE=82221776; PubMed=7045833; | | | |
| RA | Thim L., Moody A.J.; | | | |
| RT | "The amino acid sequence of porcine glucicentin."; | | | |
| RL | Peptides 2 Suppl. 2:37-39(1981). | | | |
| RN | [3] | | | |
| RP | SEQUENCE OF 33-61. | | | |
| RA | Bromer W.W., Sinn L.G., Behrens O.K.; | | | |
| RT | "The amino acid sequence of glucagon. V. Location of amide groups, acid degradation studies and summary of sequential evidence."; | | | |
| RL | J. Am. Chem. Soc. 79:2807-2810(1957). | | | |
| RN | [4] | | | |
| RP | SEQUENCE OF 78-107. | | | |
| RX | MEDLINE=89327238; PubMed=2753890; | | | |
| RA | Orskov C., Bersani M., Johnsen A.H., Hoejtrup P., Holst J.J.; | | | |
| RT | "Complete sequences of glucagon-like peptide-1 from human and pig small intestine."; | | | |
| RL | J. Biol. Chem. 264:12826-12829(1989). | | | |
| RN | [5] | | | |
| RP | SEQUENCE OF 111-158. | | | |
| RX | MEDLINE=88243712; PubMed=3379036; | | | |
| RA | Buhl T., Thim L., Kotof H., Orskov C., Harling H., Holst J.J.; | | | |
| RT | "Naturally occurring products of proglucagon 111-160 in the porcine and human small intestine."; | | | |
| RL | J. Biol. Chem. 263:8621-8624(1988). | | | |
| RN | [6] | | | |
| RP | X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS). | | | |
| RX | MEDLINE=76051297; PubMed=171582; | | | |
| RA | Sasaki K., Dockerill S., Adamiak D.A., Tickle I.J., Blundell T.L.; | | | |
| RT | "X-ray analysis of glucagon and its relationship to receptor binding."; | | | |
| RL | Nature 257:751-757(1975). | | | |
| CC | -1- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES THE BLOOD SUGAR LEVEL. | | | |

| | | | | | | |
|----|----|------|-----|---|------------|--------------------|
| 34 | 83 | 53.5 | 75 | 1 | GLUC_AMICA | P33528 amia calva |
| 35 | 79 | 51.0 | 36 | 1 | GLUC_HYDCO | P09682 hydrolagus |
| 36 | 61 | 39.4 | 42 | 1 | GIP_BOVIN | P09680 bos taurus |
| 37 | 61 | 39.4 | 42 | 1 | GIP_PIG | P01281 sus scrofa |
| 38 | 61 | 39.4 | 144 | 1 | GIP_MOUSE | P48756 mus musculu |
| 39 | 61 | 39.4 | 144 | 1 | GIP_RAT | Q06145 rattus norv |
| 40 | 60 | 38.7 | 153 | 1 | GIP_HUMAN | P09681 homo sapien |
| 41 | 59 | 38.1 | 72 | 1 | VIP_BOVIN | P81401 bos taurus |
| 42 | 59 | 38.1 | 72 | 1 | VIP_PIG | P01284 sus scrofa |
| 43 | 59 | 38.1 | 72 | 1 | VIP_RABIT | P32649 oryctolagus |
| 44 | 59 | 38.1 | 170 | 1 | VIP_HUMAN | P01282 homo sapien |
| 45 | 59 | 38.1 | 170 | 1 | VIP_MOUSE | P32648 mus musculu |

ALIGNMENTS

CC -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
 CC HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
 CC CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS
 CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
 CC IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
 CC -!- MISCELLANEOUS: X'S IN THE SEQUENCE WERE INCLUDED BY HOMOLGY WITH
 CC HUMAN SEQUENCE.
 CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
 CC PIR; A01540; GCPG.
 CC DR PDB; 1GNC; 30-SEP-83.
 CC DR InterPro; IPR000532; Glucagon.
 CC DR Pfam; PF00123; hormone2; 3.
 CC DR SMART; SM00070; GLUCA; 3.
 CC DR PROSITE; PS00260; GLUCAGON; 3.
 CC KW Glucagon family; Hormone; Cleavage on pair of basic residues;
 CC 3D-structure.
 CC FT NON_TER 1 1
 CC FT PEPTIDE 1 69 GLICENTIN.
 CC FT PEPTIDE 1 30 GLICENTIN-RELATED POLYPEPTIDE.
 CC FT PEPTIDE 33 61 GLUCAGON.
 CC FT PEPTIDE 78 107 GLUCAGON-LIKE PEPTIDE 1.
 CC FT PEPTIDE 126 158 GLUCAGON-LIKE PEPTIDE 2.
 CC FT HELIX 39 42
 CC FT TURN 43 45
 CC FT HELIX 46 55
 CC FT TURN 56 57
 CC SQ SEQUENCE 158 AA; 18212 MW; 28C6FCF257F333B2 CRC64;
 CC
 CC Query Match 100.0%; Score 155; DB 1; Length 158;
 CC Best Local Similarity 100.0%; Pred. No. 5e-15;
 CC Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 CC
 CC QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
 CC |||||
 CC DB 78 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 107
 CC
 CC RESULT 2
 CC GLUC_BOVIN STANDARD; PRT; 180 AA.
 CC AC P01272;
 CC DT 21-JUL-1986 (Rel. 01, Created)
 CC DT 13-AUG-1987 (Rel. 05, Last sequence update)
 CC DT 15-JUN-2002 (Rel. 41, Last annotation update)
 CC DE Glucagon precursor [Contains: Glucicentin-related polypeptide (GRPP);
 CC DE Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
 CC DE (GLP2)].
 CC GN CCG.
 CC OS Bos taurus (Bovine).
 CC OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 CC OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 CC OC Bovidae; Bovinae; Bos.
 CC OX NCBI_TaxID=9913;
 CC [1]
 CC RN SEQUENCE FROM N.A.
 CC RX MEDLINE=83299996; PubMed=6577439;
 CC RA Lopez L.C., Frazier M.L., Su C.-J., Kumar A., Saunders G.F.;
 CC RT "Mammalian pancreatic preproglucagon contains three glucagon-related
 CC RT peptides."
 CC RL Proc. Natl. Acad. Sci. U.S.A. 80:5485-5489 (1983).
 CC RN [2]
 CC RP SEQUENCE OF 53-81.
 CC RX MEDLINE=71166445; PubMed=5102927;
 CC RA Broner W.W., Boucher M.E., Koffenberger J.E. Jr.;
 CC RT "Amino acid sequence of bovine glucagon."
 CC RL J. Biol. Chem. 246:2822-2827 (1971).
 CC RN [3]
 CC RN STRUCTURE BY NMR OF 53-81.
 CC RX MEDLINE=71166445; PubMed=6631957;
 CC RA Braun W., Wider G., Lee K.H., Wuthrich K.;
 CC RT "Conformation of glucagon in a lipid-water interphase by 1H nuclear
 CC RT magnetic resonance."
 CC RL J. Mol. Biol. 169:921-948 (1983).

CC -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
 CC RAISES THE BLOOD SUGAR LEVEL.
 CC -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
 CC HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
 CC CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
 CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
 CC IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
 CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
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 CC or send an email to license@isb-sib.ch).
 CC -----
 CC EMBL; K00107; AAA30538.1; -
 CC PIR; A01538; GCHO
 CC PDB; 1KX6; 13-FEB-02.
 CC DR InterPro; IPR000532; Glucagon.
 CC DR Pfam; PF00123; hormone2; 3.
 CC DR PRINTS; PR00275; GLUCAGON.
 CC DR SMART; SM00070; GLUCA; 3
 CC DR PROSITE; PS00260; GLUCAGON; 4.
 CC KW Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
 CC 3D-structure.
 CC FT SIGNAL 1 20
 CC FT PEPTIDE 21 50 GLICENTIN-RELATED POLYPEPTIDE.
 CC FT PEPTIDE 53 81 GLUCAGON.
 CC FT PEPTIDE 92 128 GLUCAGON-LIKE PEPTIDE 1.
 CC FT PEPTIDE 146 178 GLUCAGON-LIKE PEPTIDE 2.
 CC SQ SEQUENCE 180 AA; 20944 MW; 8D9B4FF05B9F15FF CRC64;
 CC
 CC Query Match 100.0%; Score 155; DB 1; Length 180;
 CC Best Local Similarity 100.0%; Pred. No. 5.7e-15;
 CC Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 CC
 CC QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
 CC |||||
 CC DB 98 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 127
 CC
 CC RESULT 3
 CC GLUC_CAVPO STANDARD; PRT; 180 AA.
 CC ID GLUC_CAVPO
 CC AC P05110;
 CC DT 13-AUG-1987 (Rel. 05, Created)
 CC DT 13-AUG-1987 (Rel. 05, Last sequence update)
 CC DT 16-OCT-2001 (Rel. 40, Last annotation update)
 CC DE Glucagon precursor [Contains: Glucicentin-related polypeptide (GRPP);
 CC DE Glucagon; Glucagon-37 (Oxyntomodulin); Glucagon-like peptide 1 (GLP1);
 CC DE Glucagon-like peptide 2 (GLP2)].
 CC GN CCG.
 CC OS Cavia porcellus (Guinea pig).
 CC OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 CC OC Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
 CC OX NCBI_TaxID=10141;
 CC [1]
 CC RN SEQUENCE FROM N.A.
 CC RP MEDLINE=86248118; PubMed=3755107;
 CC RX Seino S., Welsh M., Bell G.I., Chan S.J., Steiner D.F.;
 CC RA "Mutations in the guinea pig preproglucagon gene are restricted to a
 CC RT specific portion of the prohormone sequence."
 CC RL FEBS Lett. 203:25-30 (1986).
 CC RN [2]
 CC RP SEQUENCE OF 53-81.
 CC RX MEDLINE=86165412; PubMed=3956884;
 CC RA Huang C.G., Eng J., Pan Y.-C.E., Hulmes J.D., Yalow R.S.;
 CC RT "Guinea pig glucagon differs from other mammalian glucagons."
 CC RL Diabetes 35:508-512 (1986).
 CC RN [3]
 CC RP PARTIAL SEQUENCE OF 53-89.

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RX MEDLINE=86017849; PubMed=4048553;
RX Conlon J.M., Hansen H.F., Schwartz T.W.;
RT "Primary structure of glucagon and a partial sequence of
RT oxyntomodulin [glucagon-37] from the guinea pig.";
RL Regul. Pept. 11:309-320(1985).
CC -1- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC RAISES THE BLOOD SUGAR LEVEL.
CC -1- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLOS
CC HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC -1- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC -1- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL; D00014; BAA00010.1; --
CC PIR; A24856; GCGP.
CC HSSP; P01274; 1GCM.
CC InterPro; IPR000532; Glucagon.
CC Pfam; PF00123; hormone2; 3.
CC PRINTS; PR00275; GLUCAGON.
CC SMART; SM00070; GLUCA; 3.
CC DR PROSITE; PS00260; GLUCAGON; 4.
CC DR Glucagon family; Hormone; Cleavage on pair of basic residues; Signal.
KW SIGNAL 1 20 GLICENTIN-RELATED POLYPEPTIDE.
FT PEPTIDE 21 50 GLUCAGON.
FT PEPTIDE 53 81 GLUCAGON-37.
FT PEPTIDE 53 89 GLUCAGON-LIKE PEPTIDE 1.
FT PEPTIDE 92 128 GLUCAGON-LIKE PEPTIDE 2.
FT PEPTIDE 146 178 GLUCAGON-LIKE PEPTIDE 2.
SQ SEQUENCE 180 AA; 20972 MW; 702PB181161D2776 CRC64;

Query Match 100.0%; Score 155; DB 1; Length 180;
Best Local Similarity 100.0%; Pred. No. 5.7e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGFTFTSDVSSYLEGQAARKEFIWLKVR 30
   |||||
DB 98 HAEGFTFTSDVSSYLEGQAARKEFIWLKVR 127
   |||||

RESULT 4
GLUC_HUMAN
ID GLUC_HUMAN STANDARD; PRT; 180 AA.
DT 21-JUL-1986 (Rel. 01, Created)
DT 13-AUG-1987 (Rel. 05, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Glucagon precursor [Contains: Glucicentin-related polypeptide (GRPP);
DE Glucagon; Glucagon-like peptide 1 (GLP); Glucagon-like peptide 2
DE (GLP2)].
DN GCG.
GN Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=88330860; PubMed=2901414;
RA Drucker D.J., Asa S.;
RT "Glucagon gene expression in vertebrate brain.";
RL J. Biol. Chem. 263:13475-13478(1988).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=86259053; PubMed=3725587;
RA White J.W., Saunders G.F.;

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```

RT "Structure of the human glucagon gene.";
RL Nucleic Acids Res. 14:4719-4730(1986).
RC [3]
RC SEQUENCE FROM N.A.
RP RC
RP TISSUE=Liver;
RX MEDLINE=83271477; PubMed=6877358;
RA Bell G.I., Sanchez-Pescador R., Laybourn P.J., Najarian R.C.;
RT "Exon duplication and divergence in the human proglucagon gene.";
RL Nature 304:368-371(1983).
RL [4]
RC SEQUENCE FROM N.A.
RP RC
RP TISSUE=Pancreas;
RA Strausberg R.;
RT Submitted (MAR-2001) to the EMBL/GenBank/DBJ databases.
RL [5]
RC SEQUENCE OF 53-81.
RP RC
RA Thomsen J., Kristiansen K., Brunfeldt K., Sundby F.;
RT "The amino acid sequence of human glucagon.";
RL FEBS Lett. 21:3115-319(1972).
RL [6]
RC SEQUENCE OF 98-127.
RP RC
RX MEDLINE=89372738; PubMed=2753890;
RA Orskov C., Bersani M., Johnsen A.H., Hoejrup P., Holst J.J.;
RT "Complete sequences of glucagon-like peptide-1 from human and pig
small intestine.";
RL J. Biol. Chem. 264:12826-12829(1989).
RL [7]
RC X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS) OF 53-81.
RP RC
RX MEDLINE=98334683; PubMed=9667960;
RA Sturm N.S., Lin Y., Burley S.K., Krstenansky J.L., Ahn J.M.,
RA Azize B.Y., Trivedi D., Hruby V.J.;
RT "Structure-function studies on positions 17, 18, and 21 replacement
analogues of glucagon: the importance of charged residues and salt
bridges in glucagon biological activity.";
RL J. Med. Chem. 41:2693-2700(1998).
RC -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC RAISES THE BLOOD SUGAR LEVEL.
CC -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC -!- PHARMACEUTICAL: Available under the names Glucagon (Eli Lilly) and
CC Glucagon or Glucagon Novo Nordisk (Novo Nordisk). Used to treat
CC severe hypoglycemia in insulin-dependent diabetics.
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC -!- DATABASE: NAME=Glucagon at Eli Lilly;
CC NOTE=clinical information on Eli Lilly glucagon products;
CC WWW="http://www.lillydatabases.com/Products/PatientInfo.cfm".
CC -----
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CC EMBL; J04040; AAA52567.1; -
CC EMBL; X03991; CAA27627.1; -
CC EMBL; V01515; CAA24759.1; -
CC EMBL; BC005278; AAH05278.1; -
CC PIR; A24377; GCHU.
CC PIR; S23309; S23309.
CC PDB; 1BHO; 18-NOV-98.
CC Genew; HGNC:4191; GCG.
CC MIM; 138030; -
CC MIM; 231530; -
CC InterPro; IPR000532; Glucagon.
CC Pfam; PF001133; hormn22; 3.
CC PRINTS; PR00275; GLUCAGON.
CC SMART; SM00070; GLUCA; 3.
CC PROSITE; PS00260; GLUCAGON; 4.

```

KW Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW Pharmaceutical; 3D-structure.

FT SIGNAL 1 20
FT PEPTIDE 21 50 GLICENTIN-RELATED POLYPEPTIDE.
FT PEPTIDE 53 81 GLUCAGON.
FT PEPTIDE 92 128 GLUCAGON-LIKE PEPTIDE 1.
FT PEPTIDE 146 178 GLUCAGON-LIKE PEPTIDE 2.
FT PEPTIDE 180 AA; 20909 MW; 7A99EC629B2862C CRC64;
SQ SEQUENCE

Query Match 100.0%; Score 155; DB 1; Length 180;
Best Local Similarity 100.0%; Pred. No. 5.7e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGETSDVSSYLEGOAKEFIAMLVKGR 30
DB 98 HAEGETSDVSSYLEGOAKEFIAMLVKGR 127

RESULT 5

GLUC_MESAU STANDARD; PRT; 180 AA.

AC P01273;
DT 21-JUL-1986 (Rel. 01, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Glucagon precursor [Contains: Glucicentin-related polypeptide (GRPP);
DE Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
DE (GLP2)].
GN GCG.

OS Mesocricetus auratus (Golden hamster).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
OC Mesocricetus.

OX NCBI_TaxID=10036;

RN [1]
RP SEQUENCE FROM N.A.

RX MEDLINE=83167563; PubMed=6835407;
RA Bell G.I.; Sauter R.F.; Mullenbach G.T.;

RT "Hamster preproglucagon contains the sequence of glucagon and two
RT related peptides."
RL Nature 302:716-718(1983).
RN [2]
RP REVISIONS TO 12-15.

RA Bell G.I.;

RL Submitted (XXX-1985) to the EMBL/GenBank/DBJ databases.

CC -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC -!- RAISES THE BLOOD SUGAR LEVEL.

CC -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.

CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS

CC IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.

CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.

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CC EMBL; J00059; AAA37074.1; -

DR PIR; A01539; GCHY.

DR HSP; P01274; IGCN.

DR InterPro; IPR000532; Glucagon.

DR Pfam; PF00123; hormone2; 3.

DR PRINTS; PR00275; GLUCAGON.

DR SMART; SM00070; GLUCA; 3.

DR PROSITE; PS00260; GLUCAG; 4.

KW Glucagon family; Hormone; Cleavage on pair of basic residues; Signal.

FT SIGNAL 1 20

FT PEPTIDE 21 50 GLICENTIN-RELATED POLYPEPTIDE.
FT PEPTIDE 53 81 GLUCAGON.
FT PEPTIDE 92 128 GLUCAGON-LIKE PEPTIDE 1.
FT PEPTIDE 146 178 GLUCAGON-LIKE PEPTIDE 2.
SQ SEQUENCE 180 AA; 20954 MW; 02791B49D7AADD4B CRC64;

Query Match 100.0%; Score 155; DB 1; Length 180;
Best Local Similarity 100.0%; Pred. No. 5.7e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGETSDVSSYLEGOAKEFIAMLVKGR 30
DB 98 HAEGETSDVSSYLEGOAKEFIAMLVKGR 127

RESULT 6

GLUC_MOUSE

ID GLUC_MOUSE STANDARD; PRT; 180 AA.

AC P55095;

DT 01-OCT-1996 (Rel. 34, Created)

DT 01-OCT-1996 (Rel. 34, Last sequence update)

DT 15-JUN-2002 (Rel. 41, Last annotation update)

DE Glucagon precursor [Contains: Glucicentin-related polypeptide (GRPP);

DE Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2

DE (GLP2)].

GN GCG.

OS Mus musculus (Mouse).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

OX NCBI_TaxID=10090;

RN [1]
RP SEQUENCE FROM N.A.

RX TISSUE=Pancreatic islets;

RA MEDLINE=95247722; PubMed=7730317;

RA Rothenberg M.E.; Eilertson C.D.; Klein K.; Zhou Y.; Linberg I.;

RA McDonald J.K.; Mackin R.B.; Noe B.D.;

RT "Processing of mouse proglucagon by recombinant prohormone convertase

RT 1 and immunopurified prohormone convertase 2 in vitro."

RL J. Biol. Chem. 270:10136-10146(1995).

RN [2]
RP SEQUENCE FROM N.A.

RA Shamsadin R.; Knepel W.;

RT "Mouse glucagon full length cDNA."

RL Submitted (JUN-2000) to the EMBL/GenBank/DBJ databases.

CC -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND

CC -!- RAISES THE BLOOD SUGAR LEVEL.

CC -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS

CC HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT

CC CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.

CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS

CC IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.

CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.

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CC or send an email to license@isb-sib.ch).

CC EMBL; Z46845; CAA86902.1; -

DR EMBL; AF276754; AAK96898.1; -

DR HSP; P01274; IGCN

DR MGD; MGI:95674; Gcg.

DR InterPro; IPR000532; Glucagon.

DR Pfam; PF00123; hormone2; 3.

DR PRINTS; PR00275; GLUCAGON.

DR SMART; SM00070; GLUCA; 3.

DR PROSITE; PS00260; GLUCAG; 4.

KW Glucagon family; Hormone; Cleavage on pair of basic residues; Signal.

FT SIGNAL 1 20

FT PEPTIDE 21 50

GLICENTIN-RELATED POLYPEPTIDE.

```

FT PEPTIDE 53 81 GLUCAGON.
FT PEPTIDE 92 128 GLUCAGON-LIKE PEPTIDE 1.
FT PEPTIDE 146 178 GLUCAGON-LIKE PEPTIDE 2.
SQ SEQUENCE 180 AA; 20906 MW; 595AA6DD9A589950 CRC64;

Query Match 100.0%; Score 155; DB 1; Length 180;
Best Local Similarity 100.0%; Pred. No. 5.7e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAQAEFIWLKGR 30
DB 98 HAEGTFTSDVSSYLEGQAQAEFIWLKGR 127

RESULT 8
ID _GLUC RAT STANDARD; PRT; 180 AA.
AC P068E3;
DT 01-JAN-1988 (Rel. 06, Created)
DT 01-JAN-1988 (Rel. 06, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Glucagon precursor [Contains: Glucocentin-related polypeptide (GRPP)];
DE Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
DE (GLP2)].
GN GCG.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=85054853; PubMed=6094539;
RA Heinrich G., Gros P., Habener J.F.;
RT "Glucagon gene sequence. Four of six exons encode separate functional
domains of rat pre-proglucagon."
RL J. Biol. Chem. 259:14082-14087(1984).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=85051023; PubMed=6548696;
RA Heinrich G., Gros P., Lund P.K., Bentley R.C., Habener J.F.;
RT "Pre-proglucagon messenger ribonucleic acid: nucleotide and encoded
amino acid sequences of the rat pancreatic complementary
deoxyribonucleic acid."
RL Endocrinology 115:2176-2181(1984).
RN [3]
RP SEQUENCE FROM N.A.
RX MEDLINE=86304324; PubMed=3528148;
RA Mojsov S., Heinrich G., Wilson I.B., Ravazzola M., Orci L.,
RA Habener J.F.;
RT "Preproglucagon gene expression in pancreas and intestine diversifies
at the level of post-translational processing."
RL J. Biol. Chem. 261:11880-11889(1986).
CC -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
RAISES THE BLOOD SUGAR LEVEL.
CC -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC
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CC
CC EMBL; K02813; AAA41235.1;
CC EMBL; K02809; AAA41235.1; JOINED.
CC EMBL; K02810; AAA41235.1; JOINED.
CC EMBL; K02811; AAA41235.1; JOINED.
CC EMBL; K02812; AAA41235.1; JOINED.
CC PIR; A22655; GCRT.
CC PIR; A44198; A44198.
CC HSSP; P01274; IGCN.
CC InterPro; IPR000532; Glucagon.
CC Pfam; PF00123; hormone2; 3.

QY 1 HAEGTFTSDVSSYLEGQAQAEFIWLKGR 30
DB 98 HAEGTFTSDVSSYLEGQAQAEFIWLKGR 127

RESULT 7
ID _GLUC OCTDE STANDARD; PRT; 180 AA.
AC P22890;
DT 01-AUG-1991 (Rel. 19, Created)
DT 01-AUG-1991 (Rel. 19, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Glucagon precursor [Contains: Glucocentin-related polypeptide (GRPP)];
DE Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
DE (GLP2)].
GN GCG.
OS Octodon degus (Degu).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Hystriognathi; Octodontidae; Octodon.
OX NCBI_TaxID=10160;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=91155952; PubMed=2293024;
RA Nishi M., Steiner D.F.;
RT "Cloning of complementary DNAs encoding islet amyloid polypeptide,
insulin, and glucagon precursors from a New World rodent, the degu,
Octodon degus."
RL Mol. Endocrinol. 4:1192-1198(1990).
CC -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
RAISES THE BLOOD SUGAR LEVEL.
CC -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC
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CC
CC EMBL; M57688; AAA40588.1;
CC PIR; C36118; GCRTDU.
CC HSSP; P01274; IGCN.
CC InterPro; IPR000532; Glucagon.
CC Pfam; PF00123; hormone2; 3.
CC Pfam; PF00275; GLUCAGON.
CC PRINTS; SM00070; GLUCA; 3.
CC SMART; SM00070; GLUCA; 3.
CC PROSITE; PS00260; GLUCAGON; 4.
CC Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
Amidation.
CC
CC SIGNAL 1 20
CC PEPTIDE 21 50 GLUCOCENTIN-RELATED POLYPEPTIDE.
CC PEPTIDE 53 81 GLUCAGON.
CC PEPTIDE 92 127 GLUCAGON-LIKE PEPTIDE 1.
CC PEPTIDE 146 178 GLUCAGON-LIKE PEPTIDE 2.
CC MOD RES 127 127 AMIDATION (G-128 PROVIDE AMIDE GROUP).
CC SEQUENCE 180 AA; 21165 MW; 6E8836160A9A3051 CRC64;

Query Match 100.0%; Score 155; DB 1; Length 180;

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DR PRINTS; PR00275; GLUCAGON.
DR SMART; SM00070; GLUCA; 3.
DR PROSITE; PS00260; GLUCAGON; 4.
KW Glucagon family; Hormone; Cleavage on pair of basic residues; Signal.
FT SIGNAL 1 20
FT PEPTIDE 21 50 GLICENTIN-RELATED POLYPEPTIDE.
FT PEPTIDE 53 81 GLUCAGON.
FT PEPTIDE 92 128 GLUCAGON-LIKE PEPTIDE 1.
FT PEPTIDE 146 178 GLUCAGON-LIKE PEPTIDE 2.
FT PEPTIDE 180 AA; 20846 MW; 76931409D03C7978 CRC64;
SQ SEQUENCE 180 AA; 20846 MW; 76931409D03C7978 CRC64;

Query Match 100.0%; Score 155; DB 1; Length 180;
Best Local Similarity 100.0%; Pred. No. 5.7e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
   |||||
DB 98 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 127
   |||||

RESULT 9
GLUC_CHICK STANDARD; PRT; 151 AA.
AC P01277;
DT 21-JUL-1986 (Rel. 01, Created)
DT 01-AUG-1990 (Rel. 15, Last sequence update)
DT 15-JUL-1999 (Rel. 38, Last annotation update)
DE Glucagon precursor.
OS Gallus gallus (Chicken), and
OS Meleagris gallopavo (Common turkey),
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae;
OC Gallus.
OX NCBI_TaxID=9031, 9103;
RN [1]
RP SEQUENCE FROM N.A.
RC SPECIES=Chicken; TISSUE=Pancreas;
RX MEDLINE=9024992; PubMed=2338135;
RA Hasegawa S., Terazono K., Nata K., Takada T., Yamamoto H.,
RA Okamoto H.;
RT "Nucleotide sequence determination of chicken glucagon precursor
RT cDNA. Chicken preproglucagon does not contain glucagon-like peptide
RT II.";
RL FEBS Lett. 264:117-120(1990).
RN [2]
RP SEQUENCE OF 55-83.
RC SPECIES=Chicken;
RX MEDLINE=76069271; PubMed=1194290;
RA Pollock H.G., Kimmel J.R.;
RT "Chicken glucagon. Isolation and amino acid sequence studies.";
RL J. Biol. Chem. 250:9377-9380(1975).
RN [3]
RP COMPOSITION, AND SEQUENCE OF 55-83.
RC SPECIES=M.gallopavo;
RX MEDLINE=73074118; PubMed=4645932;
RA Markussen J., Frandsen E.K., Heding L.G., Sundby F.;
RT "Turkey glucagon: crystallization, amino acid composition and
RT immunology.";
RL Horm. Metab. Res. 4:360-363(1972).
RN [4]
RP FUNCTION: PROMOTES HYDROLYSIS OF GLUCOGEN AND LIPIDS, AND RAISES
RC THE BLOOD SUGAR LEVEL.
CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC -!- MISCELLANEOUS: THE COMPOSITION OF TURKEY GLUCAGON APPEARS TO BE
CC IDENTICAL WITH CHICKEN.
CC -!- MISCELLANEOUS: CHICKEN PREPROGLUCAGON DOES NOT CONTAIN
CC GLUCAGON-LIKE PEPTIDE II.
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC -----
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DR EMBL; Y07539; CAA68827.1; -.
DR PIR; S09992; GCCH.
DR PIR; A91740; A91740.
DR HSSP; P01274; IGCN.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 2.
DR PRINTS; PR00275; GLUCAGON.
DR SMART; SM00070; GLUCA; 2.
DR PROSITE; PS00260; GLUCAGON; 3.
KW Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW Amidation.
FT SIGNAL 1 22
FT CHAIN 23 151 PROGLUCAGON.
FT PEPTIDE 55 83 GLUCAGON.
FT PROPEP 86 118
FT PEPTIDE 118 147 GLUCAGON-LIKE PEPTIDE.
FT MOD RES 147 147
SQ SEQUENCE 151 AA; 17520 MW; B6C0D87536C0AEB5 CRC64;

Query Match 92.3%; Score 143; DB 1; Length 151;
Best Local Similarity 86.7%; Pred. No. 2.4e-13;
Matches 26; Conservative 3; Mismatches 1; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
   |||||
DB 118 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 147
   |||||

RESULT 10
GLUC_RANCA STANDARD; PRT; 103 AA.
AC P15438; P15439; P15440;
DT 01-APR-1990 (Rel. 14, Created)
DT 01-JUL-1993 (Rel. 26, Last sequence update)
DT 01-JUL-1993 (Rel. 26, Last annotation update)
DE Glucagon precursor (Fragments).
OS Rana catesbeiana (Bull frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranioidea; Rana.
OX NCBI_TaxID=8400;
RN [1]
RP SEQUENCE.
RC TISSUE=Pancreas;
RX MEDLINE=88257102; PubMed=3260236;
RA Pollock H.G., Hamilton J.W., Rouse J.B., Ebner K.E., Rawitch A.B.;
RT "Isolation of peptide hormones from the pancreas of the bullfrog;
RT (Rana catesbeiana). Amino acid sequences of pancreatic polypeptide,
RT oxyntomodulin, and two glucagon-like peptides.";
RL J. Biol. Chem. 263:9746-9751(1988).
RN [2]
RP FUNCTION: PROMOTES HYDROLYSIS OF GLUCOGEN AND LIPIDS, AND RAISES
CC THE BLOOD SUGAR LEVEL.
CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC -!- MISCELLANEOUS: X'S IN THE SEQUENCE WERE INCLUDED BY HOMOLOGY WITH
CC OTHER SPECIES SEQUENCES.
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC -----
DR PIR; B28091; GCFGB.
DR HSSP; P01274; IGCN.
DR InterPro; IPR000532; Glucagon.
DR PRINTS; PR00275; GLUCAGON.
DR SMART; SM00070; GLUCA; 3.
DR PROSITE; PS00260; GLUCAGON; 3.
KW Glucagon family; Hormone.
FT PEPTIDE 1 29 GLUCAGON.
FT PEPTIDE 1 36 GLUCAGON-36 (OXYNTOMODULIN).
FT PEPTIDE 39 70 GLUCAGON-LIKE PEPTIDE 1.
FT NON CONS 70 71
FT PEPTIDE 71 103 GLUCAGON-LIKE PEPTIDE 2.
SQ SEQUENCE 103 AA; 11719 MW; 316287B7BAE1C8F7 CRC64;
```

Query Match 83.2%; Score 129; DB 1; Length 103;
 Best Local Similarity 76.7%; Pred. No. 1.6e-11;
 Matches 23; Conservative 5; Mismatches 2; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFIAMLVKGR 30
 ||:|||||:|||||:|||||:|||||
 Db 39 HADGFTSDMSSYLEKAKEFVMDLIKGR 68

RESULT 11
 GLUM_ANGAN STANDARD; PRT; 30 AA.
 AC P41521;
 DT 01-NOV-1995 (Rel. 32, Created)
 DT 01-NOV-1995 (Rel. 32, Last sequence update)
 DT 01-NOV-1995 (Rel. 32, Last annotation update)
 DE Glucagon-like peptide (GLP).
 OS Anguilla anguilla (European freshwater eel), and
 OS Anguilla rostrata (American eel).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Actinopterygii; Neopterygii; Teleostei; Anguilliformes; Anguillidae;
 OC Anguilla.
 OC NCBI_TaxID=7936, 7938;
 [1]
 RN SEQUENCE.
 RP TISSUE=Pancreas;
 RX MEDLINE=91340068; PubMed=1874395;
 RA Conlon J.M., Andrews P.C., Thim L., Moon T.W.;
 RT "The primary structure of glucagon-like peptide but not insulin has
 RT been conserved between the American eel, Anguilla rostrata and the
 RT European eel, Anguilla anguilla."
 RL Gen. Comp. Endocrinol. 82:23-32(1991).
 CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
 DR PIR; B61125; B61125.
 DR PIR; C61125; C61125.
 DR HSP; P01275; 1BH0.
 DR InterPro; IPR000532; Glucagon.
 DR Pfam; PF00123; hormone2; 1.
 DR PRINTS; PR00275; GLUCAGON.
 DR SMART; SM00070; GLUCA; 1.
 DR PROSITE; PS00260; GLUCAGON; 1.
 KW Glucagon family; Amidation.
 FT MOD_RES 30 30
 SQ SEQUENCE 30 AA; 3376 MW; 592DA5EABD6549D0 CRC64;

Query Match 81.3%; Score 126; DB 1; Length 30;
 Best Local Similarity 76.7%; Pred. No. 1.2e-11;
 Matches 23; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFIAMLVKGR 30
 |||:|||||:|||||:|||||:|||||
 Db 1 HAEGTFTSDVSSYLEGQAAKEFVMDLIKGR 30

RESULT 12
 GLU2_LOPAM STANDARD; PRT; 122 AA.
 AC P04032;
 DT 01-NOV-1986 (Rel. 03, Created)
 DT 01-NOV-1986 (Rel. 03, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE Glucagon II precursor [Contains: Glucagon-related polypeptide (GRPP);
 DE Glucagon II; Glucagon-like peptide II].
 OS Lophius americanus (American goosefish) (Anglerfish).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Actinopterygii; Neopterygii; Teleostei; Anguilliformes; Anguillidae;
 OC Acanthomorpha; Paracanthopterygii; Lophiiformes; Lophidae; Lophius.
 OC NCBI_TaxID=8073;
 [1]
 RN SEQUENCE FROM N.A.
 RP SEQUENCE.
 RX MEDLINE=83135785; PubMed=6338015;
 RA Lund P.K., Goodman R.H., Montminy M.R., Dee P.C., Habener J.F.;

RT "Anglerfish islet pre-proglucagon II. Nucleotide and corresponding
 RT amino acid sequence of the cDNA.";
 RL J. Biol. Chem. 258:3280-3284(1983).
 RN [2]
 RP PROCESSING.
 RX MEDLINE=86286913; PubMed=3526301;
 RA Noe B.D., Andrews P.C.;
 RT "Specific glucagon-related peptides isolated from anglerfish islets
 RT are metabolic cleavage products of (pre)proglucagon-II.";
 RL Peptides 7:331-339(1986).
 CC -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
 CC THE BLOOD SUGAR LEVEL.
 CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
 CC IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
 CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
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 CC EMBL; V00632; CAA23905.1; -.
 DR PIR; A05150; GCAF2.
 DR HSP; P01274; IGCN.
 DR InterPro; IPR000532; Glucagon.
 DR Pfam; PF00123; hormone2; 2.
 DR PRINTS; PR00275; GLUCAGON.
 DR SMART; SM00070; GLUCA; 2.
 DR PROSITE; PS00260; GLUCAGON; 2.
 KW Glucagon family; Hormone; Cleavage on pair of basic residues; Signal.
 FT SIGNAL 1 21
 FT PEPTIDE 22 49 GLICENTIN-RELATED POLYPEPTIDE.
 FT PEPTIDE 52 80 GLUCAGON II.
 FT PROPEP 83 86
 FT PEPTIDE 89 119 GLUCAGON-LIKE PEPTIDE II.
 SQ SEQUENCE 122 AA; 14171 MW; 5140AC47EF915519 CRC64;

Query Match 77.4%; Score 120; DB 1; Length 122;
 Best Local Similarity 70.0%; Pred. No. 3.6e-10;
 Matches 21; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFIAMLVKGR 30
 ||:|||||:|||||:|||||:|||||
 Db 89 HADGTTSDVSSYLEGQAAKEFVMDLIKGR 118

RESULT 13
 GLUC_ICTPU STANDARD; PRT; 71 AA.
 AC P04033;
 DT 01-NOV-1986 (Rel. 03, Created)
 DT 01-MAR-1989 (Rel. 10, Last sequence update)
 DT 01-NOV-1990 (Rel. 16, Last annotation update)
 DE Glucagon precursor (Fragment).
 OS Ictalurus punctatus (Channel catfish).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Siluriformes;
 OC Ictaluridae; Ictalurus.
 OC NCBI_TaxID=7998;
 [1]
 RN SEQUENCE.
 RP TISSUE=Pancreas;
 RX MEDLINE=87156787; PubMed=30303023;
 RA Hoosain N.M., Mahrenholz A.M., Andrews P.C., Gurd R.S.;
 RT "Biological activities of catfish glucagon and glucagon-like
 RT peptide.";
 RL Biochem. Biophys. Res. Commun. 143:87-92(1987).
 RN [2]
 RP SEQUENCE.
 RP TISSUE=Pancreas;


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RX MEDLINE=85157536; PubMed=3838546;
RA Andrews P.C., Ronner P.;
RT "Isolation and structures of glucagon and glucagon-like peptide from
RT catfish pancreas.";
RL J. Biol. Chem. 260:3910-3914(1985).
CC -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC THE BLOOD SUGAR LEVEL.
CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC -!- IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC -!- MISCELLANEOUS: X'S IN THE SEQUENCE WERE INCLUDED BY HOMOLGY WITH
CC AMERICAN GOOSEFISH SEQUENCES.
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR PIR; A05166; GCIDC.
DR HSSP; P01274; IGCN.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 2.
DR SMART; SM00070; GLUCA; 2.
DR PROSITE; PS00260; GLUCAGON; 2.
KW Glucagon family; Hormone.
FT PEPTIDE 1 29 GLUCAGON.
FT PEPTIDE 38 71 GLUCAGON-LIKE PEPTIDE.
FT CONFLICT 53 53 E -> D (IN REF. 2).
FT NON TER 71 71
SQ SEQUENCE 71 AA; 8173 MW; 24688E79AD981A8F CRC64;

Query Match 74.8%; Score 116; DB 1; Length 71;
Best Local Similarity 70.0%; Pred. No. 7.8e-10;
Matches 21; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
DB 38 HADGTYTSDVSSYLQEQAAKDFITLKSQG 67

RESULT 14
GLUC_LEPSP STANDARD; PRT; 78 AA.
AC P09566;
DT 01-MAR-1989 (Rel. 10, Created)
DT 01-NOV-1990 (Rel. 16, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Glucagon precursor [Contains: Glucagon; Glucagon-36 (Oxyntomodulin);
DE Glucagon-like peptide] (Fragment).
OS Lepisosteus spatula (Alligator gar) (Atractosteus spatula).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Semionotiformes; Lepisosteidae;
OC Lepisosteus.
OX NCBI_TaxID=7917;
RN [1]
RP SEQUENCE OF 1-36 AND 45-78.
RC TISSUE=Pancreas;
RX MEDLINE=88196798; PubMed=3282974;
RA Pollock H.G., Kimmel J.R., Ebner K.E., Hamilton J.W., Rouse J.B.,
RA Lance V., Rawitch A.B.;
RT "Isolation of alligator gar (Lepisosteus spatula) glucagon,
RT oxyntomodulin, and glucagon-like peptide: amino acid sequences of
RT oxyntomodulin and glucagon-like peptide.";
RL Gen. Comp. Endocrinol. 69:133-140(1988).
RN [2]
RP PRELIMINARY SEQUENCE OF 1-29.
RC TISSUE=Pancreas;
RX MEDLINE=88030594; PubMed=3311873;
RA Pollock H.G., Kimmel J.R., Hamilton J.W., Rouse J.B., Ebner K.E.,
RA Lance V., Rawitch A.B.;
RT "Isolation and structures of alligator gar (Lepisosteus spatula)
RT insulin and pancreatic polypeptide.";
RL Gen. Comp. Endocrinol. 67:375-382(1987).
CC -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC THE BLOOD SUGAR LEVEL.
CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC -!- IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC -!- MISCELLANEOUS: X'S IN THE SEQUENCE WERE INCLUDED BY HOMOLGY WITH

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CC AMERICAN GOOSEFISH SEQUENCES.
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR PIR; S06339; GCGXA.
DR HSSP; P01274; IGCN.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 2.
DR SMART; SM00070; GLUCA; 2.
DR PROSITE; PS00260; GLUCAGON; 2.
KW Glucagon family; Hormone.
FT PEPTIDE 1 29 GLUCAGON.
FT PEPTIDE 1 36 GLUCAGON-36.
FT PEPTIDE 45 78 GLUCAGON-LIKE PEPTIDE.
SQ SEQUENCE 78 AA; 8990 MW; 30106496271594E0 CRC64;

Query Match 74.8%; Score 116; DB 1; Length 78;
Best Local Similarity 66.7%; Pred. No. 8.6e-10;
Matches 20; Conservative 7; Mismatches 3; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
DB 45 HADGTYTSDVSSYLQDQAAKFTWLKQG 74

RESULT 15
GLUC_PIAME STANDARD; PRT; 71 AA.
AC P81880;
DT 30-MAY-2000 (Rel. 39, Created)
DT 30-MAY-2000 (Rel. 39, Last sequence update)
DT 30-MAY-2000 (Rel. 39, Last annotation update)
DE Glucagon precursor (Fragment).
OS Piaractus mesopotamicus (Pacu).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Characiformes;
OC Characidae; Piaractus.
OX NCBI_TaxID=42528;
RN [1]
RP SEQUENCE.
RC TISSUE=Pancreas;
RX MEDLINE=99259587; PubMed=10327603;
RA de Lima J.A., Oliveira B., Conlon J.M.;
RT "Purification and characterization of insulin and peptides derived
RT from proglucagon and prosomatostatin from the fruit-eating fish, the
RT pacu Piaractus mesopotamicus.";
RL Comp. Biochem. Physiol. 122B:127-135(1999).
CC -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC THE BLOOD SUGAR LEVEL.
CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC -!- IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC -!- MISCELLANEOUS: X'S IN THE SEQUENCE WERE INCLUDED BY HOMOLGY WITH
CC OTHER FISH SEQUENCES.
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR HSSP; P01274; IGCN.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 2.
DR PRINTS; PR00275; GLUCAGON.
DR SMART; SM00070; GLUCA; 2.
DR PROSITE; PS00260; GLUCAGON; 2.
KW Glucagon family; Hormone.
FT NON TER 1 1
FT PEPTIDE 1 29 GLUCAGON.
FT PEPTIDE 38 71 GLUCAGON-LIKE PEPTIDE.
FT NON TER 71 71
SQ SEQUENCE 71 AA; 8146 MW; F66A3CA2DD9806C5 CRC64;

Query Match 73.5%; Score 114; DB 1; Length 71;
Best Local Similarity 66.7%; Pred. No. 1.5e-09;
Matches 20; Conservative 6; Mismatches 4; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
DB 38 HADGTYTSDVSAYLQDQAAKDFITLKSQG 67

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Search completed: January 7, 2003, 16:23:50
Job time : 10 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: January 7, 2003, 16:22:14 ; Search time 29 Seconds
(without alignments)
213.152 Million cell updates/sec

Title: US-09-830-323-1
Perfect score: 155
Sequence: 1 HAEGTFTSDVSSYLEGQAQAEFIWLKGR 30

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 671580 seqs, 206047115 residues

Total number of hits satisfying chosen parameters: 671580

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

SPTREMBL_21.*

- 1: sp_archaea.*
- 2: sp_bacteria.*
- 3: sp_fungi.*
- 4: sp_human.*
- 5: sp_invertebrate.*
- 6: sp_mammal.*
- 7: sp_mhc.*
- 8: sp_organelle.*
- 9: sp_phage.*
- 10: sp_plant.*
- 11: sp_rodent.*
- 12: sp_virus.*
- 13: sp_vertebrate.*
- 14: sp_unclassified.*
- 15: sp_virus.*
- 16: sp_bacteriap.*
- 17: sp_archaeap.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|-------|-------------|
| 1 | 155 | 100.0 | 180 | 6 | Q95LGO |
| 2 | 143 | 92.3 | 206 | 13 | Q91410 |
| 3 | 137 | 88.4 | 204 | 13 | O12956 |
| 4 | 129 | 83.2 | 220 | 13 | Q8UWL9 |
| 5 | 125 | 80.6 | 266 | 13 | O42143 |
| 6 | 120 | 77.4 | 219 | 13 | O42144 |
| 7 | 118 | 76.1 | 72 | 13 | Q91409 |
| 8 | 118 | 76.1 | 178 | 13 | Q91971 |
| 9 | 113 | 72.9 | 178 | 13 | Q91189 |
| 10 | 103 | 66.5 | 121 | 13 | Q9DDE6 |
| 11 | 102 | 65.8 | 160 | 13 | Q9PURI |
| 12 | 95 | 61.3 | 62 | 13 | Q9PRW9 |
| 13 | 90 | 58.1 | 96 | 13 | Q9DG43 |
| 14 | 83 | 53.5 | 120 | 13 | Q9PURI |
| 15 | 61 | 39.4 | 130 | 11 | Q9CVF1 |
| 16 | 61 | 39.4 | 144 | 11 | Q9D887 |

| | | | | | |
|----|------|------|-----|----|--------|
| 17 | 59 | 38.1 | 171 | 11 | Q9D227 |
| 18 | 59 | 38.1 | 389 | 2 | Q93IH2 |
| 19 | 58.5 | 37.7 | 426 | 16 | P71006 |
| 20 | 54 | 34.8 | 172 | 13 | Q9DE29 |
| 21 | 53.5 | 34.5 | 175 | 13 | Q90XZ4 |
| 22 | 52.5 | 33.9 | 427 | 17 | Q8TLY0 |
| 23 | 52 | 33.5 | 138 | 13 | Q98SP4 |
| 24 | 52 | 33.5 | 171 | 13 | Q9PUF8 |
| 25 | 52 | 33.5 | 173 | 13 | Q98SP5 |
| 26 | 51.5 | 33.2 | 285 | 17 | Q8TPJ9 |
| 27 | 51 | 32.9 | 352 | 5 | Q9XXQ1 |
| 28 | 51 | 32.9 | 810 | 4 | Q9NTW8 |
| 29 | 51 | 32.9 | 867 | 4 | Q9UFY9 |
| 30 | 50.5 | 32.6 | 175 | 13 | Q98TU3 |
| 31 | 50.5 | 32.6 | 210 | 5 | Q95XL4 |
| 32 | 50.5 | 32.6 | 224 | 16 | Q8XW49 |
| 33 | 50.5 | 32.6 | 372 | 10 | Q9XFW9 |
| 34 | 50 | 32.3 | 89 | 13 | Q98SP6 |
| 35 | 50 | 32.3 | 171 | 10 | Q9FGY5 |
| 36 | 50 | 32.3 | 244 | 16 | Q8ZIU5 |
| 37 | 50 | 32.3 | 331 | 5 | O18301 |
| 38 | 49.5 | 31.9 | 378 | 5 | Q25062 |
| 39 | 49.5 | 31.9 | 571 | 5 | Q966F0 |
| 40 | 49.5 | 31.9 | 576 | 5 | Q9BIJ4 |
| 41 | 49.5 | 31.9 | 589 | 5 | Q9NSB9 |
| 42 | 49.5 | 31.9 | 613 | 5 | Q8WSP1 |
| 43 | 49.5 | 31.9 | 786 | 5 | Q9NSB7 |
| 44 | 49.5 | 31.9 | 835 | 5 | Q9NSB8 |
| 45 | 49 | 31.6 | 315 | 11 | Q9D3P0 |

ALIGNMENTS

RESULT 1

Q95LGO PRELIMINARY; PRT; 180 AA.
AC Q95LGO;
DT 01-DEC-2001 (T-REMBLrel. 19, Created)
DT 01-DEC-2001 (T-REMBLrel. 19, Last sequence update)
DT 01-MAR-2002 (T-REMBLrel. 20, Last annotation update)
DE Preproglucagon.
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX NCBI_TaxID=9615;
RN [1]
RP SEQUENCE FROM N.A.
RA Irwin D.M.;
RT "cDNA cloning of proglucagon from the stomach and pancreas of the dog."
RL Submitted (SEP-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF308439; AAL09425.1; -
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 3.
DR PROSITE; PS00260; GLUCAGON; UNKNOWN 3.
SQ SEQUENCE 180 AA; 21114 MW; 80F66941AFC324FD CRC64;

Query Match 100.0%; Score 155; DB 6; Length 180;
Best Local Similarity 100.0%; Pred. No. 2.3e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAQAEFIWLKGR 30

Db 98 HAEGTFTSDVSSYLEGQAQAEFIWLKGR 127

RESULT 2

Q91410 PRELIMINARY; PRT; 206 AA.
AC Q91410;
DT 01-NOV-1996 (T-REMBLrel. 01, Created)
DT 01-NOV-1996 (T-REMBLrel. 01, Last sequence update)

DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
 DE Proglucagon.
 GN PROGLUCAGON.
 OS Gallus gallus (Chicken).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
 OC Gallus.
 OX NCBI_TaxID=9031;
 RN (1)
 RP SEQUENCE FROM N.A.
 RX MEDLINE=95295739; PubMed=7776976;
 RA Irwin D.M., Wong J.;
 RT "Trout and chicken proglucagon: alternative splicing generates mRNA
 transcripts encoding glucagon-like peptide 2";
 RL Mol. Endocrinol. 9:267-277(1995).
 DR EMBL; S78477; AAB34506.1; -.
 DR HSSP; P01274; IGCN.
 DR InterPro; IPR000532; Glucagon.
 DR Pfam; PF00123; hormone2; 3.
 DR PRINTS; PR00275; hormone2; 3.
 DR SMART; SM00070; GLUCA; 3.
 DR PROSITE; PS00260; GLUCAGON; 3.
 SQ SEQUENCE -206 AA; 23875 MW; AB299E1B02FC6AA4 CRC64;

 Query Match 92.3%; Score 143; DB 13; Length 206;
 Best Local Similarity 86.7%; Pred. No. 1.8e-13;
 Matches 26; Conservative 3; Mismatches 1; Indels 0; Gaps 0;

 QY 1 HAEGTFTSDVSSYLEGQAQKEFTIAWLKGR 30
 |||||:||||:||||:||||:||||:||||:
 Db 118 HAEGTFTSDITSYLEGQAQKEFTIAWLKGR 147

 RESULT 3
 OI2956 PRELIMINARY; PRT; 204 AA.
 AC OI2956; OI2955;
 DT 01-JUL-1997 (TrEMBLrel. 04, Created)
 DT 01-JUL-1997 (TrEMBLrel. 04, Last sequence update)
 DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
 DE Glucagon precursor.
 OS Heloderma suspectum (Gila monster).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Lepidosauria; Squamata; Scleroglossa; Anguimorpha; Helodermatidae;
 OC Heloderma.
 OX NCBI_TaxID=8554;
 RN (1)
 RP SEQUENCE FROM N.A., ALTERNATIVE SPLICING, AND TISSUE SPECIFICITY.
 RC TISSUE=INTESTINE, AND PANCREAS;
 RX MEDLINE=97172477; PubMed=9020121;
 RA Chen Y.B., Drucker D.J.;
 RT "Tissue-specific expression of unique mRNAs that encode proglucagon-
 derived peptides or exendin 4 in the lizard";
 RL J. Biol. Chem. 272:4108-4115(1997).
 CC -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
 CC THE BLOOD SUGAR LEVEL (BY SIMILARITY).
 CC -!- ALTERNATIVE PRODUCTS: 2 ISOFORMS; LPII (SHOWN HERE) AND LPI; ARE
 CC PRODUCED BY ALTERNATIVE SPLICING.
 CC -!- TISSUE SPECIFICITY: ISOFORM LPII IS EXPRESSED IN BOTH PANCREAS AND
 CC INTESTINE. EXPRESSION OF ISOFORM LPI IS RESTRICTED TO THE
 CC PANCREAS. NEITHER ISOFORM IS DETECTED IN SALIVARY GLAND.
 CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS IN
 CC RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
 CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
 DR EMBL; U77612; AAB51129.1; -.
 DR EMBL; U77611; AAB51128.1; -.
 DR HSSP; P01274; IGCN.
 DR InterPro; IPR000532; Glucagon.
 DR Pfam; PF00123; hormone2; 3.
 DR PRINTS; PR00275; hormone2; 3.
 DR SMART; SM00070; GLUCA; 3.
 DR PROSITE; PS00260; GLUCAGON; 2.
 KW Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;

KW Alternative splicing.
 FT SIGNAL 1 20 BY SIMILARITY.
 FT PEPTIDE 21 50 GRPP (GLICENTINE RELATED POLYPEPTIDE).
 FT PEPTIDE 53 81 GLUCAGON.
 FT PEPTIDE 116 145 GLUCAGON-LIKE PEPTIDE 1.
 FT PEPTIDE 164 196 GLUCAGON-LIKE PEPTIDE 2.
 FT VARSPLIC 149 149 D -> E (IN ISOFORM LPI).
 FT VARSPLIC 150 204 MISSING (IN ISOFORM LPI).
 SQ SEQUENCE 204 AA; 23553 MW; B132E3FE46873E72 CRC64;

 Query Match 88.4%; Score 137; DB 13; Length 204;
 Best Local Similarity 83.3%; Pred. No. 1.4e-12;
 Matches 25; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

 QY 1 HAEGTFTSDVSSYLEGQAQKEFTIAWLKGR 30
 |||||:||||:||||:||||:||||:||||:
 Db 116 HAEGTFTSDISSYLEGQAQKEFTIAWLKGR 145

 RESULT 4
 O8UWL9 PRELIMINARY; PRT; 220 AA.
 AC O8UWL9
 DT 01-MAR-2002 (TrEMBLrel. 20, Created)
 DT 01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
 DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
 DE Proglucagon.
 OS Hoplobatrachus rugulosus.
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Amphibia; Batrachia; Anura; Neobatrachia; Ranoidae; Ranidae;
 OC Hoplobatrachus.
 OX NCBI_TaxID=110072;
 RN (1)
 RP SEQUENCE FROM N.A.
 RA Yeung C.-M., Chow B.K.C.;
 RT "Identification of a proglucagon cDNA from Rana tigrina rugulosa that
 encodes two GLP-1s";
 RL Gen. Comp. Endocrinol. 124:0-0(2001).
 DR EMBL; AF324209; AAL35758.1; -.
 DR InterPro; IPR000532; Glucagon.
 DR Pfam; PF00123; hormone2; 4.
 DR PRINTS; PR00275; GLUCAGON.
 DR SMART; SM00070; GLUCA; 4.
 DR PROSITE; PS00260; GLUCAGON; UNKNOWN 4.
 SQ SEQUENCE 220 AA; 25615 MW; C72D926E7F89E381 CRC64;

 Query Match 83.2%; Score 129; DB 13; Length 220;
 Best Local Similarity 76.7%; Pred. No. 2.5e-11;
 Matches 23; Conservative 5; Mismatches 2; Indels 0; Gaps 0;

 QY 1 HAEGTFTSDVSSYLEGQAQKEFTIAWLKGR 30
 |||||:||||:||||:||||:||||:||||:
 Db 135 HAEGTFTSDMTSYLEEKAAKEFTVDWLKGR 164

 RESULT 5
 O42143 PRELIMINARY; PRT; 266 AA.
 AC O42143
 DT 01-JAN-1998 (TrEMBLrel. 05, Created)
 DT 01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
 DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
 DE Glucagon I precursor [Contains: Glucagon; glucagon-like peptide 1A
 (GLP-1A); glucagon-like peptide 1B (GLP-1B); glucagon-like peptide 1C
 (GLP-1C); glucagon-like peptide 2 (GLP-2)].
 DE Xenopus laevis (African clawed frog).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidae; Pipidae;
 OC Xenopodinae; Xenopus.
 OX NCBI_TaxID=8355;
 RN (1)
 RP SEQUENCE FROM N.A., AND ALTERNATIVE SPLICING.
 RC TISSUE=PANCREAS;

```
RX MEDLINE=97368292; PubMed=9223287;
RA Irwin D.M., Satkunatajah M., Wen Y., Brubaker P.L., Pederson R.A.,
RA Wheeler M.B.;
RT "The Xenopus proglucagon gene encodes novel GLP-1-like peptides with
RT insulinotropic properties.";
RL Proc. Natl. Acad. Sci. U.S.A. 94:7915-7920(1997).
CC -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC THE BLOOD SUGAR LEVEL.
CC -!- ALTERNATIVE PRODUCTS: 2 ISOFORMS; 1 (SHOWN HERE) AND 2; ARE
CC PRODUCED BY ALTERNATIVE SPLICING.
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR EMBL; AF004432; AAB65660.1; -.
DR HSSP; P01274; 1GCN.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 5.
DR PRINTS; PR00275; GLUCAGON.
DR SMART; SM00070; GLUCA; 5.
DR PROSITE; PS00260; GLUCAGON; 5.
KW Glucagon family; Hormone; Signal; Cleavage on pair of basic residues;
KW Multigene family; Alternative splicing.
FT SIGNAL 1 ? POTENTIAL.
FT PEPTIDE 53 81 GLUCAGON.
FT PEPTIDE 97 133 GLUCAGON-LIKE PEPTIDE 1A.
FT PEPTIDE 142 173 GLUCAGON-LIKE PEPTIDE 1B.
FT PEPTIDE 180 211 GLUCAGON-LIKE PEPTIDE 1C.
FT PEPTIDE 227 259 GLUCAGON-LIKE PEPTIDE 2.
FT VARSPLIC 214 261 MISSING (IN ISOFORM 2).
SQ SEQUENCE 266 AA; 30951 MW; 5447BBC20AF872C CRC64;

Query Match 80.6%; Score 125; DB 13; Length 266;
Best Local Similarity 70.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 7; Mismatches 2; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
|||:||||:||||:||||:||||:||||:
Db 180 HAEGTFTNDMTNYLEEKAKEFVGWLKGR 209

RESULT 6
Q42144 PRELIMINARY; PRT; 219 AA.
AC Q42144;
DT 01-JAN-1998 (TREMBlrel. 05, Created)
DT 01-JAN-1998 (TREMBlrel. 05, Last sequence update)
DT 01-JUN-2001 (TREMBlrel. 17, Last annotation update)
DE Glucagon II precursor [Contains: Glucagon; glucagon-like peptide 1A
DE (GLP-1A); glucagon-like peptide 1B (GLP-1B); glucagon-like peptide 1C
DE (GLP-1C)].
OS Xenopus laevis (African clawed frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Mesobatrachia; Pipidae;
OC Xenopodinae; Xenopus.
OX NCBI_TaxID=8355;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PANCREAS;
RX MEDLINE=97368292; PubMed=9223287;
RA Irwin D.M., Satkunatajah M., Wen Y., Brubaker P.L., Pederson R.A.,
RA Wheeler M.B.;
RT "The Xenopus proglucagon gene encodes novel GLP-1-like peptides with
RT insulinotropic properties.";
RL Proc. Natl. Acad. Sci. U.S.A. 94:7915-7920(1997).
CC -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC THE BLOOD SUGAR LEVEL.
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR EMBL; AF004433; AAB65661.1; -.
DR HSSP; P01274; 1GCN.
DR InterPro; IPR000532; Glucagon.
DR PRINTS; PR00275; hormone2; 4.
DR SMART; SM00070; GLUCA; 4.
DR PROSITE; PS00260; GLUCAGON; 3.
KW Glucagon family; Hormone; Signal; Cleavage on pair of basic residues;
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KW Multigene family.
FT SIGNAL 1 20 POTENTIAL.
FT PEPTIDE 53 81 GLUCAGON.
FT PEPTIDE 97 133 GLUCAGON-LIKE PEPTIDE 1A.
FT PEPTIDE 142 173 GLUCAGON-LIKE PEPTIDE 1B.
FT PEPTIDE 180 211 GLUCAGON-LIKE PEPTIDE 1C.
SQ SEQUENCE 219 AA; ACC699233C362CE0 CRC64;

Query Match 77.4%; Score 120; DB 13; Length 219;
Best Local Similarity 66.7%; Pred. No. 5.7e-10;
Matches 20; Conservative 7; Mismatches 3; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
|||:||||:||||:||||:||||:||||:
Db 180 HAEGTFTNDMTNYLEEKAKEFVGWLKGR 209

RESULT 7
Q91409 PRELIMINARY; PRT; 72 AA.
AC Q91409; Q91232;
DT 01-NOV-1996 (TREMBlrel. 01, Created)
DT 01-NOV-1996 (TREMBlrel. 01, Last sequence update)
DT 01-DEC-2001 (TREMBlrel. 19, Last annotation update)
DE PROGLUCAGON (Fragment).
OS Oncorhynchus tshawytscha (Chinook salmon) (King salmon).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;
OC Protacanthopterygii; Salmoniformes; Salmonidae; Oncorhynchus.
OX NCBI_TaxID=74940;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=95295739; PubMed=7776976;
RA Irwin D.M., Wong J.;
RT "Trout and chicken proglucagon: alternative splicing generates mRNA
RT transcripts encoding glucagon-like peptide 2.";
RL Mol. Endocrinol. 9:267-277(1995).
DR EMBL; S78474; AADI4283.1; -.
DR EMBL; U19920; AAC59670.1; -.
DR HSSP; P01274; 1GCN.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 2.
DR PRINTS; PR00275; GLUCAGON.
DR SMART; SM00070; GLUCA; 2.
DR PROSITE; PS00260; GLUCAGON; UNKNOWN_1.
FT NON TER 1 1
SQ SEQUENCE 72 AA; 8293 MW; 8584352B1C260A31 CRC64;

Query Match 76.1%; Score 118; DB 13; Length 72;
Best Local Similarity 66.7%; Pred. No. 3.1e-10;
Matches 20; Conservative 7; Mismatches 3; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
|||:||||:||||:||||:||||:||||:
Db 39 HADGTYTSDVSTYLDQAQKDFVSLKSGR 68

RESULT 8
Q91971 PRELIMINARY; PRT; 178 AA.
AC Q91971; Q91408; Q91188; Q92169;
DT 01-NOV-1996 (TREMBlrel. 01, Created)
DT 01-NOV-1996 (TREMBlrel. 01, Last sequence update)
DT 01-JUN-2001 (TREMBlrel. 17, Last annotation update)
DE Glucagon I precursor.
OS Oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;
OC Protacanthopterygii; Salmoniformes; Salmonidae; Oncorhynchus.
OX NCBI_TaxID=8022;
RN [1]
RP SEQUENCE FROM N.A., AND ALTERNATIVE SPLICING.
RC TISSUE=DISTAL SMALL INTESTINE, AND PANCREAS;
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RX MEDLINE=95295739; PubMed=7776976;
RA Irwin D.M., Wong J.;
RT "Trout and chicken proglucagon: alternative splicing generates mRNA
RT transcripts encoding glucagon-like peptide 2.";
RL Mol. Endocrinol. 9:267-277(1995).
CC -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC THE BLOOD SUGAR LEVEL (BY SIMILARITY).
CC -!- ALTERNATIVE PRODUCTS: 2 ISOFORMS; INTESTINAL (SHOWN HERE) AND
CC PANCREATIC; ARE PRODUCED BY ALTERNATIVE SPLICING.
CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS IN
CC RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR EMBL; U19913; AAC59667.1; -.
DR EMBL; U19917; AAC59669.1; -.
DR EMBL; U19918; AAC60212.1; -.
DR EMBL; U19919; AAC60213.1; -.
DR EMBL; U19918; AAC60213.1; JOINED.
DR EMBL; S78475; AAB34505.1; -.
DR EMBL; S78473; AAB34504.2; -.
DR HSSP; P01274; IGCN.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 3.
DR PRINTS; PR00275; GLUCAGON.
DR SMART; SM00070; GLUCA; 3.
DR PROSITE; PS00260; GLUCAGON; 3.
KW Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW Alternative splicing; Multigene family.
FT SIGNAL 1 ? POTENTIAL.
FT PEPTIDE ? 49 GRPP (GLICENTINE RELATED POLYPEPTIDE).
FT PEPTIDE 52 80 GLUCAGON.
FT PEPTIDE 85 120 GLUCAGON-LIKE PEPTIDE 1.
FT PEPTIDE 137 169 GLUCAGON-LIKE PEPTIDE 2.
FT VARSPLIC 124 178 MISSING (IN PANCREATIC ISOFORM).
SQ SEQUENCE 178 AA; 20034 MW; 5CF6980CF2A9D58E CRC64;

Query Match 76.1%; Score 118; DB 13; Length 178;
Best Local Similarity 66.7%; Pred. No. 9e-10;
Matches 20; Conservative 7; Mismatches 3; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAQAEFIWLKGR 30
Db 90 HADGTYTSDVSTYLQDQAQKDFVSLKSGR 119
|||:|||||:|||||:|||||:|

RESULT 9
Q91189 PRELIMINARY; PRT; 178 AA.
AC Q91189; Q92168;
DT 01-NOV-1996 (T-EMBLrel. 01, Created)
DT 01-NOV-1996 (T-EMBLrel. 01, Last sequence update)
DT 01-JUN-2001 (T-EMBLrel. 17, Last annotation update)
DE Glucagon II precursor.
OS Oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;
OC Protacanthopterygii; Salmoniformes; Salmonidae; Oncorhynchus.
OX NCBI_TaxID=8022;
RN [1]
RP SEQUENCE FROM N.A., AND ALTERNATIVE SPLICING.
RC TISSUE=DISTAL SMALL INTESTINE, AND PANCREAS;
RX MEDLINE=95295739; PubMed=7776976;
RA Irwin D.M., Wong J.;
RT "Trout and chicken proglucagon: alternative splicing generates mRNA
RT transcripts encoding glucagon-like peptide 2.";
RL Mol. Endocrinol. 9:267-277(1995).
CC -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC THE BLOOD SUGAR LEVEL (BY SIMILARITY).
CC -!- ALTERNATIVE PRODUCTS: 2 ISOFORMS; INTESTINAL (SHOWN HERE) AND
CC PANCREATIC; ARE PRODUCED BY ALTERNATIVE SPLICING.
CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS IN
CC RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR EMBL; U19914; AAC59668.1; -.

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DR EMBL; U19916; AAC60210.1; -.
DR EMBL; U19915; AAC60210.1; JOINED.
DR EMBL; U19915; AAC60209.1; -.
DR HSSP; P01274; IGCN.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 3.
DR PRINTS; PR00275; GLUCAGON.
DR SMART; SM00070; GLUCA; 3.
DR PROSITE; PS00260; GLUCAGON; UNKNOWN 2.
KW Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW Alternative splicing; Multigene family.
FT SIGNAL 1 ? POTENTIAL.
FT PEPTIDE ? 49 GRPP (GLICENTINE RELATED POLYPEPTIDE).
FT PEPTIDE 52 80 GLUCAGON.
FT PEPTIDE 85 120 GLUCAGON-LIKE PEPTIDE 1.
FT PEPTIDE 137 169 GLUCAGON-LIKE PEPTIDE 2.
FT VARSPLIC 124 178 MISSING (IN PANCREATIC ISOFORM).
SQ SEQUENCE 178 AA; 19998 MW; E89D73866CD91C66 CRC64;

Query Match 72.9%; Score 113; DB 13; Length 178;
Best Local Similarity 65.5%; Pred. No. 5.1e-09;
Matches 19; Conservative 7; Mismatches 3; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAQAEFIWLKGR 29
Db 90 HADGTYTSDVSTYLQDQAQKDFVSLKSG 118
|||:|||||:|||||:|||||:|

RESULT 10
Q9DDDE6 PRELIMINARY; PRT; 121 AA.
AC Q9DDDE6;
DT 01-MAR-2001 (T-EMBLrel. 16, Created)
DT 01-MAR-2001 (T-EMBLrel. 16, Last sequence update)
DT 01-DEC-2001 (T-EMBLrel. 19, Last annotation update)
DE Glucagon polypeptide.
GN GCG OR GUU.
OS Brachydanio rerio (Zebrafish) (Zebra danio).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
OC Cyprinidae; Danio.
OX NCBI_TaxID=7955;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=99425190; PubMed=10495291;
RA Argenton F., Zecchin E., Bortolussi M.;
RT "Early appearance of pancreatic hormone-expressing cells in the
RT zebrafish embryo.";
RL Mech. Dev. 87:217-221(1999).
DR EMBL; AJ133697; CAC20108.1; -.
DR HSSP; P01274; IGCN.
DR ZFIN; ZDB-GENE-010219-1; gcg.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 2.
DR PRINTS; PR00275; GLUCAGON.
DR SMART; SM00070; GLUCA; 2.
DR PROSITE; PS00260; GLUCAGON; 1.
KW Polyprotein.
FT CHAIN 49 79 GLUCAGON.
FT CHAIN 88 121 GLUCAGON-LIKE PEPTIDE 1.
SQ SEQUENCE 121 AA; 13537 MW; A85385F690DA180F CRC64;

Query Match 66.5%; Score 103; DB 13; Length 121;
Best Local Similarity 66.7%; Pred. No. 1.1e-07;
Matches 20; Conservative 5; Mismatches 5; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAQAEFIWLKGR 30
Db 88 HAEGTYTSDVSTYLQDQAQKDFVSLKSG 117
|||:|||||:|||||:|||||:|

RESULT 11
Q9PURI

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| | | | | |
|-----------|--|--------------|--------|---------|
| ID | Q9PUR1 | PRELIMINARY; | PRT; | 160 AA. |
| AC | Q9PUR1; Q9PRZ8; Q9PRZ7; | | | |
| DT | 01-MAY-2000 (TrEMBLrel. 13, Created) | | | |
| DT | 01-MAY-2000 (TrEMBLrel. 13, Last sequence update) | | | |
| DT | 01-DEC-2001 (TrEMBLrel. 13, Last annotation update) | | | |
| DE | Glucagon I precursor [Contains: glucagon; glucagon-like peptide 1 (GLP-1); glucagon-like peptide 2 (GLP-2)]. | | | |
| DE | Petromyzon marinus (Sea lamprey). | | | |
| OS | Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Hyperoartia; | | | |
| OC | Petromyzoniformes; Petromyzontidae; Petromyzon. | | | |
| OX | NCBI_TaxID=7757; | | | |
| ON | [1] | | | |
| RP | SEQUENCE FROM N.A. | | | |
| RC | TISSUE=INTESTINE; | | | |
| RC | MEDLINE=20022986; PubMed=10555286; | | | |
| RX | Irwin D.M., Huner O., Youson J.H.; | | | |
| RA | "Lamprey proglucagon and the origin of glucagon-like peptides."; | | | |
| RA | Mol. Biol. Evol. 16:1548-1557(1999). | | | |
| RL | [2] | | | |
| RP | SEQUENCE OF 43-71 AND 82-113. | | | |
| RC | TISSUE=INTESTINE; | | | |
| RC | MEDLINE=94010172; PubMed=8405897; | | | |
| RX | Conlon J.M., Nielsen P.F., Youson J.H.; | | | |
| RA | "Primary structures of glucagon and glucagon-like peptide isolated from the intestine of the parasitic phase lamprey Petromyzon marinus."; | | | |
| RA | Gen. Comp. Endocrinol. 91:96-104(1993). | | | |
| RL | -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES THE BLOOD SUGAR LEVEL. | | | |
| CC | -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY. | | | |
| CC | EWBL; AFI59707; AAF09186.1; -. | | | |
| DR | HSSP; P01275; IBIH0. | | | |
| DR | InterPro; IPR000532; Glucagon. | | | |
| DR | Pfam; PF00123; hormone2; 2. | | | |
| DR | PRINTS; PR00275; GLUCAGON. | | | |
| DR | SMART; SM00070; GLUCA. 2. | | | |
| DR | PROSITE; PS00260; GLUCAGON; 2. | | | |
| DR | Glucagon family; Hormone; Signal; Cleavage on pair of basic residues; | | | |
| KW | Multigene family. | | | |
| FT | SIGNAL 1 22 POTENTIAL. | | | |
| FT | PEPTIDE 43 71 GLUCAGON. | | | |
| FT | PEPTIDE 82 113 GLUCAGON-LIKE PEPTIDE 1. | | | |
| FT | PEPTIDE 130 160 GLUCAGON-LIKE PEPTIDE 2. | | | |
| FT | SEQUENCE 160 AA; 18042 MW; 9A52C530DSA74072 CRC64; | | | |
| SQ | | | | |
| | Query Match 65.8%; Score 102; DB 13; Length 160; | | | |
| | Best Local Similarity 53.6%; Pred. No. 2,1e-07; | | | |
| | Matches 15; Conservative 11; Mismatches 2; Indels 0; Gaps | | | |
| QY | 1 HAEGTFTSDVSSYLEGQAQKEFIANLVK 28 | | | |
| | : : : : : : | | | |
| Db | 82 HADGTFNDMTSYLDKAKARDFVSWLAR 109 | | | |
| | | | | |
| RESULT 12 | | | | |
| Q9PRW9 | PRELIMINARY; | PRT; | 62 AA. | |
| ID | Q9PRW9; Q9PEX0; Q9PRW8; | | | |
| AC | Q9PRW9; Q9PEX0; Q9PRW8; | | | |
| DT | 01-MAY-2000 (TrEMBLrel. 13, Created) | | | |
| DT | 01-MAY-2001 (TrEMBLrel. 16, Last sequence update) | | | |
| DT | 01-JUN-2002 (TrEMBLrel. 21, Last annotation update) | | | |
| DE | Glucagon precursor [Contains: glucagon-29; glucagon-33; glucagon-like peptide] (Fragments). | | | |
| DE | Scyliorhinus canicula (Spotted dogfish) (Spotted catshark). | | | |
| OS | Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Chondrichthyes; | | | |
| OC | Elasmobranchii; Galeomorphi; Galeoidea; Carcharhiniformes; | | | |
| OC | Scyliorhinidae; Scyliorhinus. | | | |
| OX | NCBI_TaxID=7830; | | | |
| ON | [1] | | | |
| RP | SEQUENCE. | | | |
| RC | TISSUE=PANCREAS; | | | |
| RX | MEDLINE=94286411; PubMed=80159974; | | | |
| RA | Conlon J.M., Hazon N., Thim L.; | | | |

```

RT "Primary structures of peptides derived from proglucagon isolated from
RL the pancreas of the elasmobranch fish, Scyliorhinus canicula.";
CC -C- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC THE BLOOD SUGAR LEVEL.
CC -I- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR HSP; P01274; IGCN.
DR InterPro; IPR000532; Glucagon.
DR PRINTS; PR00275; GLUCAGON.
DR SMART; SM00070; GLUCA; 2.
DR PROSITE; PS00260; GLUCAGON; 2.
KW Glucagon family; Hormone.
FT PEPTIDE 1 29 GLUCAGON-29.
FT PEPTIDE 1 33 GLUCAGON-33.
FT NON CONS 33 34
FT PEPTIDE 34 62 GLUCAGON-LIKE PEPTIDE.
SQ SEQUENCE 62 AA; 7270 MW; C5FF487C12C69CD1 CRC64;

Query Match 61.3%; Score 95; DB 13; Length 62;
Best Local Similarity 55.6%; Pred. No. 7.9e-07;
Matches 15; Conservative 7; Mismatches 5; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAQKEFIANLV 27
|:||||||| |: : ||: |
Db 1 HSEGTFTSDYSKYMDNRRAKDFQWL 27
|:||||||| |: : ||: |

RESULT 13
Q9DG43 PRELIMINARY; PRT; 96 AA.
AC Q9DG43
DT 01-MAR-2001 (TEMBLrel. 16, Created)
DT 01-MAR-2001 (TEMBLrel. 16, Last sequence update)
DT 01-DEC-2001 (TEMBLrel. 19, Last annotation update)
DE Proglucagon (Fragment).
OS Ambloplites rupestris.
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
OC Acanthomorpha; Acanthopterygii; Perciformes; Percoidae;
OC Centrarchidae; Ambloplites.
OX NCBI_TaxID=109273;
RN [1]
RP SEQUENCE FROM N.A.
RA Al-Mahrouki A.A., Irwin D.M., Youson J.H.;
RT "Rock Bass Proglucagon.";
RL Submitted (SEP-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF190499; AAC16778.1; -.
DR HSP; P01274; IGCN.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 2.
DR PRINTS; PR00275; GLUCAGON.
DR SMART; SM00070; GLUCA; 2.
DR PROSITE; PS00260; GLUCAGON; UNKNOWN_1.
FT NON TER 1 1
FT CHAIN 1 >29 GLUCAGON.
FT CHAIN 39 >70 GLUCAGON-LIKE PEPTIDE 1.
FT CHAIN 86 >96 GLUCAGON-LIKE PEPTIDE 2.
FT NON TER 96 96
SQ SEQUENCE 96 AA; 11225 MW; 6435033BBDDC00CE CRC64;

Query Match 58.1%; Score 90; DB 13; Length 96;
Best Local Similarity 46.7%; Pred. No. 7.5e-06;
Matches 14; Conservative 10; Mismatches 6; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAQKEFIANLVKGR 30
|:||||| |: : ||: |
Db 1 HSQGTFTNDYTYLEDRQAQDFIRWLNKK 30
|:||||| |: : ||: |

RESULT 14
Q9PUR0 PRELIMINARY; PRT; 120 AA.
ID Q9PUR0
AC Q9PUR0;
```

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RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyooka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
RA Hayashizaki Y.;
RT "Functional annotation of a full-length mouse cDNA collection.";
EL Nature 409:685-690(2001).
DR EMBL; AK008525; BAE25720.1; -.
DR HSSP; P01274; IGCN.
DR MGD; MGI:107504; Gip.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 1.
DR SMART; SM00070; GLUCA; 1.
DR PROSITE; PS00260; GLUCAGON; 1.
FT NON TER 1
SQ _SEQUENCE 130 AA; 14906 MW; 95B3B6E91E2A7992 CRC64;

Query Match 39.4%; Score 61; DB 11; Length 130;
Best Local Similarity 40.0%; Pred. No. 0.26;
Matches 12; Conservative 7; Mismatches 11; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30
| ||||| ||| | : : : |||
DB 30 YAEGTFTSDYSIAMDKTRQDDFVNWLLAQR 59

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OM protein - protein search, using sw model

Run on: January 7, 2003, 16:22:54 ; Search time 15 Seconds

(without alignments)
58.846 Million cell updates/sec

Title: US-09-830-323-1

Perfect score: 155

Sequence: 1 HAEFTFTSDVSSYLEGQAQAEFIWLVKGR 30

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 262574 seqs, 29422922 residues

Total number of hits satisfying chosen parameters: 262574

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Issued Patents AA.*

1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep.*

2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep.*

3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep.*

4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep.*

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6: /cgn2_6/ptodata/1/iaa/backfiles1.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
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| 1 | 155 | 100.0 | 30 | 1 | US-08-066-480-6 |
| 2 | 155 | 100.0 | 30 | 1 | US-08-095-162-1 |
| 3 | 155 | 100.0 | 30 | 1 | US-08-470-220A-1 |
| 4 | 155 | 100.0 | 30 | 2 | US-08-927-227-1 |
| 5 | 155 | 100.0 | 30 | 3 | US-08-967-374-1 |
| 6 | 155 | 100.0 | 30 | 4 | US-09-348-136-1 |
| 7 | 155 | 100.0 | 30 | 4 | US-08-961-405A-5 |
| 8 | 155 | 100.0 | 30 | 4 | US-08-915-918A-5 |
| 9 | 155 | 100.0 | 30 | 4 | US-09-302-596-4 |
| 10 | 155 | 100.0 | 30 | 4 | US-08-472-349-3 |
| 11 | 155 | 100.0 | 30 | 4 | US-09-333-415-4 |
| 12 | 155 | 100.0 | 30 | 4 | US-09-585-181A-4 |
| 13 | 155 | 100.0 | 30 | 4 | US-09-209-799D-10 |
| 14 | 155 | 100.0 | 30 | 4 | US-09-975-905-1 |
| 15 | 155 | 100.0 | 30 | 4 | US-09-505-991-1 |
| 16 | 155 | 100.0 | 30 | 4 | US-09-573-809-1 |
| 17 | 155 | 100.0 | 30 | 4 | US-09-303-016-4 |
| 18 | 155 | 100.0 | 30 | 4 | US-09-212-663-4 |
| 19 | 155 | 100.0 | 30 | 5 | PCT-US95-15800-27 |
| 20 | 155 | 100.0 | 31 | 1 | US-09-025-951-1 |
| 21 | 155 | 100.0 | 31 | 1 | US-08-095-162-3 |
| 22 | 155 | 100.0 | 31 | 1 | US-08-295-913A-1 |
| 23 | 155 | 100.0 | 31 | 1 | US-08-470-220A-3 |
| 24 | 155 | 100.0 | 31 | 2 | US-08-807-263-3 |
| 25 | 155 | 100.0 | 31 | 3 | US-08-967-374-3 |
| 26 | 155 | 100.0 | 31 | 4 | US-08-961-405A-1 |
| 27 | 155 | 100.0 | 31 | 4 | US-08-915-918A-1 |

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| 28 | 155 | 100.0 | 31 | 4 | US-09-302-596-3 | Sequence 3, Appli |
| 29 | 155 | 100.0 | 31 | 4 | US-08-472-349-2 | Sequence 2, Appli |
| 30 | 155 | 100.0 | 31 | 4 | US-09-623-618B-2 | Sequence 2, Appli |
| 31 | 155 | 100.0 | 31 | 4 | US-09-623-618B-17 | Sequence 17, Appl |
| 32 | 155 | 100.0 | 31 | 4 | US-09-623-618B-27 | Sequence 27, Appl |
| 33 | 155 | 100.0 | 31 | 4 | US-09-623-618B-28 | Sequence 28, Appl |
| 34 | 155 | 100.0 | 31 | 4 | US-09-333-415-3 | Sequence 3, Appli |
| 35 | 155 | 100.0 | 31 | 4 | US-09-209-799D-1 | Sequence 1, Appli |
| 36 | 155 | 100.0 | 31 | 4 | US-09-265-141A-1 | Sequence 1, Appli |
| 37 | 155 | 100.0 | 31 | 4 | US-09-505-991-3 | Sequence 3, Appli |
| 38 | 155 | 100.0 | 31 | 4 | US-09-303-016-3 | Sequence 3, Appli |
| 39 | 155 | 100.0 | 31 | 4 | US-09-212-663-3 | Sequence 3, Appli |
| 40 | 155 | 100.0 | 31 | 5 | PCT-US95-15800-28 | Sequence 28, Appl |
| 41 | 155 | 100.0 | 33 | 4 | US-09-212-663-23 | Sequence 23, Appl |
| 42 | 155 | 100.0 | 34 | 4 | US-09-212-663-1 | Sequence 1, Appli |
| 43 | 155 | 100.0 | 34 | 4 | US-09-212-663-25 | Sequence 25, Appl |
| 44 | 155 | 100.0 | 36 | 1 | US-08-095-162-15 | Sequence 15, Appl |
| 45 | 155 | 100.0 | 36 | 1 | US-08-470-220A-15 | Sequence 15, Appl |

ALIGNMENTS

RESULT 1

US-08-066-480-6

; Sequence 6, Application US/08066480

; Patent No. 5424286

; GENERAL INFORMATION:

; APPLICANT: Eng. John

; TITLE OF INVENTION: Pharmaceutical Compositions And Use of

; NUMBER OF INVENTION: Exendin-3 and Exendin-4 for Treatment of Diabetes Mellitus

; NUMBER OF SEQUENCES: 7

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Allegretti & Witcoff, Ltd.

; STREET: 10 S. Wacker Drive

; CITY: Chicago

; STATE: Illinois

; COUNTRY: USA

; ZIP: 60606

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: Patent In Release #1.0, Version #1.25

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/08/066,480

; FILING DATE: 24-MAR-1993

; CLASSIFICATION: 514

; ATTORNEY/AGENT INFORMATION:

; NAME: McDonnell, John J

; REGISTRATION NUMBER: 26,949

; REFERENCE/DOCKET NUMBER: 93,084

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: 312-715-1000

; TELEFAX: 312-715-1234

; INFORMATION FOR SEQ ID NO: 6:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 30 amino acids

; TYPE: amino acid

; STRANDEDNESS: single

; TOPOLOGY: linear

; MOLECULE TYPE: peptide

; FEATURE:

; NAME/KEY: Peptide

; LOCATION: 1..30

; OTHER INFORMATION: /label= GLP-1-7-36

; OTHER INFORMATION: /note= "GLP-1(7-36) fragment"

US-08-066-480-6

Query Match

Best Local Similarity 100.0%; Score 155; DB 1; Length 30;

Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
|||||
DB 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30

RESULT 2

US-08-095-162-1
; Sequence 1, Application US/08095162
; Patent No. 5512459
; GENERAL INFORMATION:
; APPLICANT: Wagner, Fred W.
; APPLICANT: Stout, Jay
; APPLICANT: Henriksen, Dennis
; APPLICANT: Partridge, Bruce
; APPLICANT: Manning, Shane
; TITLE OF INVENTION: Enzymatic Method for Modification of
; RECOMBINANT POLYPEPTIDES
; NUMBER OF SEQUENCES: 26
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Merchant & Gould
; STREET: 3100 No. 5512459west Center
; CITY: Minneapolis
; STATE: MN
; COUNTRY: USA
; ZIP: 55402
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/095,162
; FILING DATE: 20-JUL-1993
; CLASSIFICATION: 514
; ATTORNEY/AGENT INFORMATION:
; NAME: Nelson, Albin J.
; REGISTRATION NUMBER: 28,659
; REFERENCE/DOCKET NUMBER: 8648.32-US01
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 612-332-5300
; TELEFAX: 612-332-9081
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 30 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; IMMEDIATE SOURCE:
; CLONE: GLP1 7-36-NH2 (Glucagon-like Peptide)
US-08-095-162-1
Query Match 100.0%; Score 155; DB 1; Length 30;
Best Local Similarity 100.0%; Pred. No. 4.2e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
|||||
DB 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30

RESULT 3

US-08-470-220A-1
; Sequence 1, Application US/08470220A
; Patent No. 5707826
; GENERAL INFORMATION:
; APPLICANT: Wagner, Fred W.
; APPLICANT: Stout, Jay
; APPLICANT: Henriksen, Dennis
; APPLICANT: Partridge, Bruce
; APPLICANT: Manning, Shane
; TITLE OF INVENTION: Enzymatic Method for Modification of
; RECOMBINANT POLYPEPTIDES
; NUMBER OF SEQUENCES: 26

; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Merchant & Gould
; STREET: 3100 No. 5707826west Center
; CITY: Minneapolis
; STATE: MN
; COUNTRY: USA
; ZIP: 55402
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/470,220A
; FILING DATE: 06-JUN-1995
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/095,162
; FILING DATE: 20-JUL-1993
; ATTORNEY/AGENT INFORMATION:
; NAME: Nelson, Albin J.
; REGISTRATION NUMBER: 28,659
; REFERENCE/DOCKET NUMBER: 8648.32-US01
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 612-332-5300
; TELEFAX: 612-332-9081
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 30 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; IMMEDIATE SOURCE:
; CLONE: GLP1 7-36-NH2 (Glucagon-like Peptide)
US-08-470-220A-1

Query Match 100.0%; Score 155; DB 1; Length 30;
Best Local Similarity 100.0%; Pred. No. 4.2e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30
|||||
DB 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLKGR 30

RESULT 4

US-08-927-227-1
; Sequence 1, Application US/08927227A
; Patent No. 5977071
; GENERAL INFORMATION:
; APPLICANT: Galloway, James A.
; APPLICANT: Hoffmann, James A.
; TITLE OF INVENTION: GLUCAGON-LIKE INSULINOTROPIC PEPTIDE ANALOGS,
; COMPOSITIONS AND METHODS
; FILE REFERENCE: X-9332B
; CURRENT APPLICATION NUMBER: US/08/927,227A
; CURRENT FILING DATE: 1997-09-10
; NUMBER OF SEQ ID NOS: 1
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1
; LENGTH: 30
; TYPE: PRT
; ORGANISM: Homo sapiens
; FEATURE:
; OTHER INFORMATION: The arginine residue at position 30 is modified so
; as to replace the terminal carboxyl group with an
; OTHER INFORMATION: amine.
US-08-927-227-1

Query Match 100.0%; Score 155; DB 2; Length 30;
Best Local Similarity 100.0%; Pred. No. 4.2e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
|||||
Db 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30

RESULT 5

US-08-967-374-1
; Sequence 1, Application US/08967374
; Patent No. 6037143
; GENERAL INFORMATION:
; APPLICANT: Wagner, Fred W.
; APPLICANT: Stout, Jay
; APPLICANT: Henriksen, Dennis
; APPLICANT: Partridge, Bruce
; APPLICANT: Manning, Shane
; TITLE OF INVENTION: Enzymatic Method for Modification of
; TITLE OF INVENTION: Recombinant Polypeptides
; NUMBER OF SEQUENCES: 26
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Merchant & Gould
; STREET: 3100 No. 6037143west Center
; CITY: Minneapolis
; STATE: MN
; COUNTRY: USA
; ZIP: 55402
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/967,374
; FILING DATE:
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/520,485
; FILING DATE: 29-AUG-1995
; ATTORNEY/AGENT INFORMATION:
; NAME: Carter, Charles G.
; REGISTRATION NUMBER: 35,093
; REFERENCE/DOCKET NUMBER: 8648.32-USDI
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 612-332-5300
; TELEFAX: 612-332-9081
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 30 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; IMMEDIATE SOURCE:
; CLONE: GLP1 7-36-NH2 (Glucagon-like Peptide)

US-08-967-374-1
Query Match 100.0%; Score 155; DB 3; Length 30;
Best Local Similarity 100.0%; Pred. No. 4.2e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
|||||
Db 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30

RESULT 6

US-09-348-136-1
; Sequence 1, Application US/09348136
; Patent No. 6133235
; GENERAL INFORMATION:
; APPLICANT: Galloway, James A.
; APPLICANT: Hoffmann, James A.
; TITLE OF INVENTION: GLUCAGON-LIKE INSULINOTROPIC PEPTIDE ANALOGS,
; TITLE OF INVENTION: COMPOSITIONS AND METHODS
; FILE REFERENCE: X-9332B

; CURRENT APPLICATION NUMBER: US/09/348,136
; CURRENT FILING DATE: 1999-07-06
; PRIOR APPLICATION NUMBER: US 08/927,227
; PRIOR FILING DATE: 1997-09-10
; NUMBER OF SEQ ID NOS: 1
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1
; LENGTH: 30
; TYPE: PRT
; ORGANISM: Homo sapiens
; FEATURE:
; OTHER INFORMATION: The arginine residue at position 30 is modified so
; OTHER INFORMATION: as to replace the terminal carboxyl group with an
; OTHER INFORMATION: amine.
US-09-348-136-1

Query Match 100.0%; Score 155; DB 4; Length 30;
Best Local Similarity 100.0%; Pred. No. 4.2e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
|||||
Db 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30

RESULT 7

US-08-961-405A-5
; Sequence 5, Application US/08961405A
; Patent No. 6191102
; GENERAL INFORMATION:
; APPLICANT: Dimarchi, Richard D.
; APPLICANT: Efendic, Suad
; TITLE OF INVENTION: USE OF GLP-1 ANALOGS AND DERIVATIVES
; TITLE OF INVENTION: ADMINISTERED PERIPHERALLY IN REGULATION OF OBESITY
; NUMBER OF SEQUENCES: 9
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: BARNES & THORNBURG
; STREET: 200 W. Madison, Suite 2601
; CITY: Chicago
; STATE: Illinois
; COUNTRY: USA
; ZIP: 60606
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/961,405A
; FILING DATE: 30-OCT-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/030,213
; FILING DATE: 05-NOV-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Martin, Alice O.
; REGISTRATION NUMBER: 35,601
; REFERENCE/DOCKET NUMBER: 3051/90264
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 312-357-1313
; TELEFAX: 312-759-5646
; INFORMATION FOR SEQ ID NO: 5:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 30 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
US-08-961-405A-5

Query Match 100.0%; Score 155; DB 4; Length 30;
Best Local Similarity 100.0%; Pred. No. 4.2e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAQKEFIWLKGR 30
|||||
Db 1 HAEGTFTSDVSSYLEGQAQKEFIWLKGR 30

RESULT 8
US-08-915-918A-5
; Sequence 5, Application US/08915918A
; Patent No. 627819
; GENERAL INFORMATION:
; APPLICANT: Eficidic, Sued
; TITLE OF INVENTION: USE OF GLP-1 OR ANALOGS IN TREATMENT OF
; TITLE OF INVENTION: MYOCARDIAL INFARCTION
; NUMBER OF SEQUENCES: 6
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: BRINKS, HOPER, GILSON & LIONE
; STREET: NBC Tower - Suite 3600, 455 N. Cityfront
; CITY: Chicago
; STATE: Illinois
; COUNTRY: USA
; ZIP: 60611-5599
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/915,918A
; FILING DATE: 21-AUG-1997
; CLASSIFICATION: 514
; ATTORNEY/AGENT INFORMATION:
; NAME: Martin, Alice O.
; REGISTRATION NUMBER: 35,601
; REFERENCE/DOCKET NUMBER: 8792/28
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 312-321-4200
; TELEFAX: 312-321-4299
; INFORMATION FOR SEQ ID NO: 5:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 30 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
US-08-915-918A-5

Query Match 100.0%; Score 155; DB 4; Length 30;
Best Local Similarity 100.0%; Pred. No. 4.2e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAQKEFIWLKGR 30
|||||
Db 1 HAEGTFTSDVSSYLEGQAQKEFIWLKGR 30

RESULT 9
US-09-302-596-4
; Sequence 4, Application US/09302596
; Patent No. 6284725
; GENERAL INFORMATION:
; APPLICANT: Coolidge, Thomas R.
; APPLICANT: Ehlers, Mario R.W.
; TITLE OF INVENTION: Metabolic Intervention with GLP-1 to Improve the Function of
; TITLE OF INVENTION: Ischemic and Reperfused Tissue
; FILE REFERENCE: P036600S1
; CURRENT APPLICATION NUMBER: US/09/302,596
; CURRENT FILING DATE: 1999-04-30
; PRIOR APPLICATION NUMBER: 60/103,498
; PRIOR FILING DATE: 1998-10-08
; NUMBER OF SEQ ID NOS: 13
; SOFTWARE: Patent In Ver. 2.0
; SEQ ID NO 4

; LENGTH: 30
; TYPE: PRT
; ORGANISM: mammalian
US-09-302-596-4

Query Match 100.0%; Score 155; DB 4; Length 30;
Best Local Similarity 100.0%; Pred. No. 4.2e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAQKEFIWLKGR 30
|||||
Db 1 HAEGTFTSDVSSYLEGQAQKEFIWLKGR 30

RESULT 10
US-08-472-349-3
; Sequence 3, Application US/08472349
; Patent No. 6284727
; GENERAL INFORMATION:
; APPLICANT: Kim, Yesook
; APPLICANT: Lambert, William J.
; APPLICANT: Qi, Hong
; APPLICANT: Gelfand, Robert A.
; APPLICANT: Geoghegan, Kieran F.
; APPLICANT: Danley, Dennis E.
; TITLE OF INVENTION: Prolonged Delivery of Peptides
; NUMBER OF SEQUENCES: 7
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pfizer Inc
; STREET: 235 East 42nd Street, 20th Floor
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10017-5755
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/472,349
; FILING DATE:
; CLASSIFICATION: 514
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US/08/181,655
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: Sheyka, Robert F.
; REGISTRATION NUMBER: 31,304
; REFERENCE/DOCKET NUMBER: PC8391
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 573-1189
; TELEFAX: (212) 573-1939
; TELEX: N/A
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 30 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ANTI-SENSE: NO
; FRAGMENT TYPE: N-terminal
; ORIGINAL SOURCE:
; ORGANISM: N/A
; STRAIN: N/A
; INDIVIDUAL ISOLATE: N/A
; HAPLOTYPE: N/A
; CELL LINE: N/A
; IMMEDIATE SOURCE:
; LIBRARY: N/A
; CLONE: N/A

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; POSITION IN GENOME:
; CHROMOSOME/SEGMENT: N/A
; MAP POSITION: N/A
; UNITS: N/A
US-08-472-349-3

Query Match      100.0%; Score 155; DB 4; Length 30;
Best Local Similarity 100.0%; Pred. No. 4.2e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
Db 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30

RESULT 11
US-09-333-415-4
; Sequence 4, Application US/09333415
; Patent No. 6344180
; GENERAL INFORMATION:
; APPLICANT: Holst, Jens J.
; APPLICANT: Vilsboell, Tina
; TITLE OF INVENTION: GLP-1 as a Diagnostic Test to Determine Beta-Cell
; TITLE OF INVENTION: Function and the Presence of the Condition of IGT and
; TITLE OF INVENTION: Type-II Diabetes
; FILE REFERENCE: P03987US0
; CURRENT APPLICATION NUMBER: US/09/333,415
; CURRENT FILING DATE: 1999-06-15
; NUMBER OF SEQ ID NOS: 13
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 4
; LENGTH: 30
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-333-415-4

Query Match      100.0%; Score 155; DB 4; Length 30;
Best Local Similarity 100.0%; Pred. No. 4.2e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
Db 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30

RESULT 12
US-09-585-181A-4
; Sequence 4, Application US/09585181A
; Patent No. 6358924
; GENERAL INFORMATION:
; APPLICANT: Hoffmann, James
; TITLE OF INVENTION: GLP-1 FORMULATIONS
; FILE REFERENCE: X-11368
; CURRENT APPLICATION NUMBER: US/09/585,181A
; CURRENT FILING DATE: 2001-08-22
; PRIOR APPLICATION NUMBER: US 60/067,600
; PRIOR FILING DATE: 1997-12-05
; NUMBER OF SEQ ID NOS: 5
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 4
; LENGTH: 30
; TYPE: PRT
; ORGANISM: Homo sapiens
; FEATURE:
; NAME/KEY: MOD RES
; LOCATION: (30)..(30)
; OTHER INFORMATION: AMIDATION
US-09-585-181A-4

Query Match      100.0%; Score 155; DB 4; Length 30;
Best Local Similarity 100.0%; Pred. No. 4.2e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
Db 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30

RESULT 13
US-09-209-799D-10
; Sequence 10, Application US/09209799D
; Patent No. 6380357
; GENERAL INFORMATION:
; APPLICANT: Hermeling, Ronald
; APPLICANT: Hoffmann, James
; APPLICANT: Narasimhan, Chakravarthy
; TITLE OF INVENTION: GLUCAGON-LIKE PEPTIDE-1 CRYSTALS
; FILE REFERENCE: X-10242
; CURRENT APPLICATION NUMBER: US/09/209,799D
; CURRENT FILING DATE: 1998-12-11
; NUMBER OF SEQ ID NOS: 29
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 10
; LENGTH: 30
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic construct
US-09-209-799D-10

Query Match      100.0%; Score 155; DB 4; Length 30;
Best Local Similarity 100.0%; Pred. No. 4.2e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
Db 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30

RESULT 14
US-09-975-905-1
; Sequence 1, Application US/09975905
; Patent No. 6388053
; GENERAL INFORMATION:
; APPLICANT: Galloway, John A
; APPLICANT: Hoffmann, James A
; TITLE OF INVENTION: Glucagon-Like Insulinotropic Peptides, Compositions and Methods
; FILE REFERENCE: X-9332E
; CURRENT APPLICATION NUMBER: US/09/975,905
; CURRENT FILING DATE: 2001-10-12
; PRIOR APPLICATION NUMBER: 09/573,809
; PRIOR FILING DATE: 2000-05-18
; NUMBER OF SEQ ID NOS: 1
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 1
; LENGTH: 30
; TYPE: PRT
; ORGANISM: Homo sapiens
; FEATURE:
; NAME/KEY: MOD RES
; LOCATION: (30)..(30)
; OTHER INFORMATION: The arginine residue at position 30 is modified so as to replace
; OTHER INFORMATION: the terminal carboxyl group with an amine.
US-09-975-905-1

Query Match      100.0%; Score 155; DB 4; Length 30;
Best Local Similarity 100.0%; Pred. No. 4.2e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30
Db 1 HAEGTFTSDVSSYLEGQAAKEFIAWLKGR 30

RESULT 15
US-09-505-991-1
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/ Sequence 1, Application US/09505991
/ Patent No. 6403361
/ GENERAL INFORMATION:
/ APPLICANT: Wagner, Fred W.
/ Stout, Jay
/ Henriksen, Dennis
/ Partridge, Bruce
/ Manning, Shane
/ TITLE OF INVENTION: Enzymatic Method for Modification of
/ Recombinant Polypeptides
/ NUMBER OF SEQUENCES: 26
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Merchant & Gould
/ STREET: 3100 No. 6403361west Center
/ CITY: Minneapolis
/ STATE: MN
/ COUNTRY: USA
/ ZIP: 55402
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: Floppy disk
/ COMPUTER: IBM PC compatible
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: Patent In Release #1.0, Version #1.30
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/09/505,991
/ FILING DATE: 17-Feb-2000
/ CLASSIFICATION: <Unknown>
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: 08/520,485
/ FILING DATE: <Unknown>
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Carter, Charles G.
/ REGISTRATION NUMBER: 35,093
/ REFERENCE/DOCKET NUMBER: 8648.32-US01
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: 612-332-5300
/ TELEFAX: 612-332-9081
/ INFORMATION FOR SEQ ID NO: 1:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 30 amino acids
/ TYPE: amino acid
/ TOPOLOGY: linear
/ MOLECULE TYPE: peptide
/ IMMEDIATE SOURCE:
/ CLONE: GLP1 7-36-NH2 (Glucagon-like Peptide)
/ SEQUENCE DESCRIPTION: SEQ ID NO: 1:
/ US-09-505-991-1

Query Match 100.0%; Score 155; DB 4; Length 30;
Best Local Similarity 100.0%; Pred. No. 4.2e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLVKGR 30
|||
DB 1 HAEGTFTSDVSSYLEGQAAKEFTIAWLVKGR 30

Search completed: January 7, 2003, 16:25:10.
Job time : 16 secs

According to the Pre Publication Rules, every patent application received by the United States Patent and Trademark Office after November 29, 2000 will be pre-published at eighteen months from the effective filing date. When the application is published the contents, including the sequences, will become prior art.

Two new databases have been created to hold the pre-published sequences:

Published_Applications_NA contains nucleic acid sequences; the search results will have the extension **.rnpb**.

Published_Applications_AA contains amino acid sequences; the search results will have the extension **.rapb**.

Each pre-published application is given a unique Publication Number. An example of a Publication Number is US20021234567A1. The "US" indicates the application was a U.S. application. The first 4 digits show the calendar year the application was published. The next 7 digits represent when the application was published. This 7-digit number starts at zero at the beginning of each calendar year. Each application published is given the next number in order. The "A" indicates a utility patent application and the "1" shows that this was the first time the application had been published. If the applicants submit changes to the application, they may request that the changed application be published again. In such instances, the "1" at the end of the number would be replaced by a "2".